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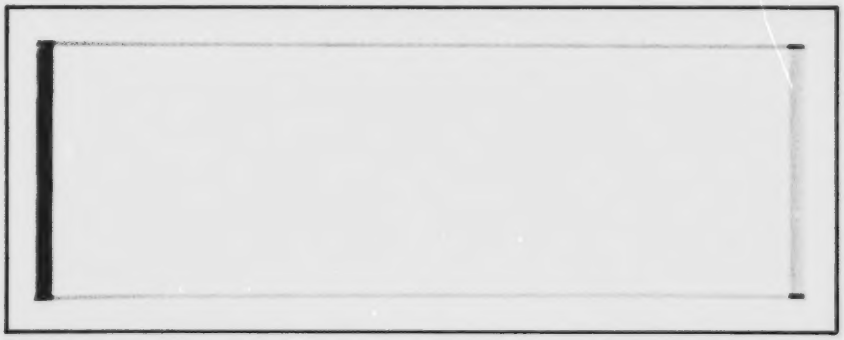

WORKING PAPER

Marketing and Economics Branch

Direction générale de la commercialisation
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Working papers are (1) interim reports completed by the staff of the Marketing & Economics Branch, and (2) research reports completed under contract. The former reports have received limited review, and are circulated for discussion and comment. Views expressed in these papers are those of the author(s) and do not necessarily represent those of Agriculture Canada.

THE FOOD MARKETING COST INDEX

(Working Paper 1/85)

O. Al-Zand*, S. Barewal and G. Hewston**

Food Markets Analysis Division
Marketing and Economics Branch
Agriculture Canada

January 1985

* O. Al-Zand is an Associate Professor of Agricultural Economics, Macdonald College, McGill University.
**S. Barewal and G. Hewston are economists with the Food Markets Analysis Division, Marketing and Economics Branch, Agriculture Canada.

Foreword

Food Markets Analysis Division has reported analyses of food price movements in its quarterly Food Market Commentary and Monthly News Release statistics 1979. Analyses were mainly based on farm and wholesale prices for various agricultural commodities. Manufacturing and distributing costs were explained by following trends in individual input prices such as wages, rail freight rates, gasoline prices. Since there was no measure of the importance of individual inputs in total operating costs it was impossible to estimate their impact on food prices. As a result, a Food Marketing Cost Index (FMCI) was developed to measure changes in prices of inputs used in food processing, wholesaling and retailing. This index complements the conventional measure of explaining marketing cost trends.

Acknowledgement

We wish to express our gratitude to M.Y. Siddigi, S. O'Brien and M. Palma of the Input Output Division at Statistics Canada for their valuable suggestions during the development of the FMCI. We would also like to thank Dr. Z. Hassan and E.S. Dunnett for their guidance in the project. H.H. Harp of U.S. Department of Agriculture and V. Kabricka of Prices Division, Statistics Canada provided helpful comments on earlier drafts.

We also appreciate the support provided by representatives of the food processing, distributing and retailing industries who were consulted during the development of the weighting diagram.

Thanks are also due to M. Hill and M. Brown of Statistical Services for programming, R.W. Blais for clerical assistance and staff of the word processing unit for typing the various drafts.

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SUMMARY

The Food Marketing Cost Index (FMCI) is a relatively new concept. It is designed to combine and measure changing costs of inputs required in food processing, wholesaling, and retailing. The FMCI represents a ratio of the current cost of a given bundle of marketing inputs divided by the corresponding cost in a base period. The behaviour of such an index, therefore, is at least a partial indicator of present or anticipated changes in the final retail price of food.

The FMCI performs a different function from more conventional measurements of agricultural and food marketing costs such as the Food Marketing Bill and Farm-Retail Price Spreads. These latter measurements are largely concerned with the decomposition of consumers' food dollars into shares of farm producers and marketing agents or the returns to their corresponding functions. The emphasis of the FMCI is on estimating the combined effect of variable (or operating) costs incurred in food processing, wholesaling, and retailing on the observed behaviour of food prices. Hence, the FMCI is an operational indicator which can be used in food price monitoring and forecasting on a timely basis.

The FMCI is an accounting concept that assumes that food price movements reflect, among other things, changes in operating costs of the food marketing sector. The significance of these costs and their systematic behaviour is evident in the steady movement of food prices. This is in contrast to the behaviour of agricultural commodity prices which are often volatile and do not tend to show clearly identifiable patterns. This implies that the linkage between operating costs of food marketing and corresponding food prices is expected to be most direct and immediate with little or no time lag in the transmission of cost changes.

The FMCI is not a substitute for more conventional measurements of marketing cost. However, it can be used in conjunction with these measurements to provide better explanations of present and anticipated food price developments.

Some of the attractive features of the FMCI are:

a) the simplicity of its periodic calculation, once relevant inputs are identified and appropriate weights assigned to them along with corresponding prices, and

b) its small cost in terms of data collection and accessibility. (This is one of the biggest problems associated with measuring farm-retail price spreads).

The Food Marketing Cost Index is constructed from prices of various marketing inputs, weighted by the derived share of each input in the total operating costs. The data are combined to generate a quarterly index which can be tracked over time.

Weights Statistics Canada's Input-Output tables, giving inter-industry value flows of goods and services for 1979 were used to construct the weighting diagram for the FMCI. The weighting diagram reflects the non-food cost structure of 13 food processing industries, wholesale trade and retail trade. Transport costs are allocated to the food processing, wholesaling and retailing sectors.

SUMMARY OF WEIGHTS

	Processing	Wholesaling-Retailing	Total Marketing[a]
Labor	0.4769	0.6199	0.5432
Containers and Packaging	0.1903	0.0169	0.1099
Transportation	0.0489	0.0545	0.0515
Travel and Promotion	0.0757	0.0609	0.0688
Fuel and Power	0.0448	0.0581	0.0510
Rent and Storage	0.0214	0.0774	0.0474
Maintenance and Repair	0.0509	0.0150	0.0342
Taxes and Insurance	0.0182	0.0277	0.0226
Services	0.0409	0.0357	0.0385
Utilities	0.0089	0.0163	0.0123
Office supplies & Other Supplies	0.0232	0.0178	0.0207
Total	1.0000	1.0000	1.0000

[a]The weights for processing, wholesaling and retailing in the total marketing costs are 0.5361, 0.1084 and 0.3555 respectively.

Price Data. Where possible, Statistics Canada's price series were used because they most closely relate to specifications of the inputs used to derive the weights. For example, the wage series used to monitor labor costs are average weekly earnings, 'including overtime - all employees' (Employment Earnings and Hours, Statistics Canada Catalog 72-002). This data series is available for the food processing, wholesaling and retailing sectors. The price series for tracking all transportation costs, however, was "rail freight rates", obtained from the Traffic and Tariffs Branch of the Canadian Transport Commission. Other input costs were generally monitored with corresponding industry selling price indexes. Statistics Canada data also meet the criteria for timeliness, consistency, validity and ease of use.

All price series required are available from mid-1977 to date. The price data were indexed to 1981 = 100.

Results

Indexes calculated using the above annual price data and the weights show that between 1978 and 1983 food marketing costs increased the most in 1981 (11.3%) and the least in 1983 (6.3%).

Labor costs contributed the most to the 1978-1984 changes in the FMCI, although labor cost did not increase as much as some other marketing cost items such as energy. The importance of labor in operating costs made the difference.

Over the 1978 to 1983 period, food marketing costs increased 57.08% in Canada and 50.8% in the U.S. The yearly changes were higher in the U.S. in 1979 and 1980 when U.S. energy prices were increasing rapidly. Energy prices were restrained in Canada during that period by federal government policies.

FOOD MARKETING COST INDEXES FOR CANADA AND THE U.S.

	Canada	U.S.
	(percent change from year ago)	
1978	N/A	8.5
1979	9.9	11.1
1980	10.5	13.5
1981	11.3	10.9
1982	9.7	5.2
1983	6.3	2.5
1978-83	57.7	50.8

Source: For U.S. as per Table 30, Appendix C.

I INTRODUCTION

Food expenditures by Canadians at the retail level have been growing steadily over the past decade from $9.5 billion in 1972 to $30.6 billion in 1982.[1] About two-thirds of these expenditures may be attributed to the cost of marketing agricultural products for home consumption. These services include transforming primary agricultural commodities into edible products and wholesaling and retailing these products to the urban consumer.

The cost of processing, wholesaling and retailing of agricultural commodities will continue to play a major role in the formation and development of prices for individual food products paid by Canadian consumers.

This report has been organized as follows:

Section II discusses the concept of the food marketing cost index.

Section III presents the methodology used to arrive at the weights for the index.

Section IV describes the various price data series required for the construction of the index.

Section V contains the results.

II CONCEPT OF THE FOOD MARKETING COST INDEX

The main objectives of this section are:

1) to examine the various methods and procedures followed in estimating the marketing cost of food;

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[1] This figure does not include about $9.8 billion spent on food away from home in 1982.

2) to assess the various methods and procedures used to explain the formation of food prices including the relationship and linkages between food prices and other primary cost and price variables; and

3) to state the assumptions underlying the Food Marketing Cost Index.

II.1 Food Expenditures and Prices

There are several factors that have contributed to the rise in total food expenditures in the past decade, including:

1) the expanding demand for food as a result of rising population and income,

2) the increasing demand for marketing services associated with food including processing, distribution and retailing, and

3) the increasing price (cost) of inputs employed in producing and marketing food as a result of market and institutional factors.[2]

[2]Market factors including the supply of and demand for the inputs employed in the food production and marketing system. Input markets can be of domestic scope (e.g. labour and land), or international dimensions (e.g. energy and capital). Under free market setting, shortages (or a threat of shortages) of an input would most likely result in temporary or permanent increase of its price while the reverse will occur in the case of surplus supply. Institutional factors entail established or conventional rigidities which govern the employment and pricing of the inputs used, particularly within the domestic market. These constraints would most likely prevent "free" market movement above or below a certain level. Minimum wage laws, labor union contracts, sanitary and grading standards, internal and external trade regulations are examples of these constraints.

Although it is often difficult isolating the effect of each of the above factors, their combined effect in food price formation is evident. Food expenditures and prices might rise as a result of the so-called "demand-pull" factors including rising population, income, and consequent expansion in the demand for food marketing services. Population and income can be classified as demand shifters where expenditures and prices might increase substantially and over a short period of time without a corresponding increase in the cost of production.

A more stable (and perhaps more recognizable) source explaining the behaviour and trends observed in food prices comprises the price (cost) of inputs employed in food production and marketing. In this "cost push" concept, costs of producing, importing, processing, distributing and retailing food items are added up to form the ultimate retail price. In other words, the cost of producing primary agricultural commodities at the farm level, or importing them at the wholesale level, is pushed or augmented further when these products are transformed into food items available on the retail shelves. Since the cost of transformation and distribution comprises the major portion of the food price, the variabilities and trends in this cost are expected to be fully reflected at the retail level.

II.2 Food Price Monitoring and Marketing Cost

Often debate is centred on the observed trends and variations in food prices. This makes the task of reporting and monitoring changes in the consumer price index for food on a timely basis more critical. A subsequent task which is becoming equally important is the identification of the major sectors contributing to the formation of food prices and the interpretation and explanation of the process of food price formation. This latter activity is also needed to be performed on a timely and systematic basis.

It is well recognized that food prices are largely built from prices of corresponding farm products and the costs incurred in transforming and distributing these products for ready availability at retail counters. Obviously, the higher the degree of transformation component embodied in a specific food, the lesser the association between farm and retail prices of that item. On the other hand, the price of food commodities with little or no transformation component, to more closely follows the price observed at the farm or the producer level. For example, it is assumed that the retail price of table eggs is strongly linked to the price received by farmers.

On the other hand, the retail price of bread would be largely determined by the cost of transformation and marketing services incurred in bread making.[3]

Further observations of the retail price of food and the farm commodity prices reveal that the volatility of farm commodity prices may not be fully and immediately reflected in the retail price of food, especially when it is only a short term activity. This volatility is often accommodated by changes in marketing margins. The behaviour of variable costs of food processing, wholesaling and retailing food, however, are largely systematic and steady in both direction and magnitude[4]. This characteristic is similar to that observed in food price changes.

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[3]Farm-retail price spread for eggs and bread is estimated at 27% and 85% of the corresponding retail prices respectively. See various issues. Food Market Commentary, Agriculture Canada.

[4]For example, consumer expenditures for U.S. farm-produced food increased by $76 billion from 1970 to 1977 ($106 to $182 billion). Higher marketing charges accounted for $54 billion or 71% of the increase. Most of the $22 billion increase in farm value (55%) occurred in a single year - 1973. Since 1973, 87% of the increase in consumer expenditures has been caused by higher marketing costs. Page ii of the "Report to Congress" CED-78-170, September 1978, U.S. General Accounting Office.

On the other hand, the strong linkage between the retail price of food and corresponding food marketing cost can be anticipated for one or more of the following reasons:

1. Prices of the bulk of Canadian farm products are determined internationally by the prevailing world supply and demand conditions. Little or no control can be exercised over these prices by domestic producers. Exceptions are nationally regulated commodities including dairy products, eggs and poultry.

2. Food marketing costs for both regulated and unregulated commodities are determined exclusively within the Canadian domestic market environment. This implies a number of cost rigidities, particularly against downward pressures, which often can be maintained with little or no reference to food marketing costs in the rest of the world.

3. Food marketing activities are primarily labor intensive. The cost of labor is among the most rigid inputs, suggesting that steady wage improvements are often expected and received, particularly during inflationary periods.

4. Food marketing functions entail a large portion of variable expenses, directly related to volume and the form of products marketed (e.g. hired labor, packaging, energy, transportation, blending, preserving, etc.). Other things equal, the higher the proportion of variable to total cost ratio of food marketing cost, the higher the degree of correlation between food price and marketing cost.

II.3 Measurements of Food Marketing Costs

Three related alternative approaches have been developed by agricultural marketing economists, for estimating and decomposing the price (cost) elements of food at the consumer level:

1) Food Marketing Bill

2) Farm-Retail Price Spreads

3) Food Marketing Cost Index

All three measurements are related by at least one common methodology and objective. They all consider marketing cost is the difference between observed retail price of food and corresponding observed farm price. Both of these prices are assumed to be given at any point in time.

The first two approaches have been used for a long time as a primary indicator of farmers' and marketing agents' shares of consumers' dollar expenditures on food.

The derivation, uses and limitations of the three concepts follow:

II.3.1 The Food Marketing Bill

The food marketing bill is generally defined as the difference between total food expenditures on domestically produced food and corresponding aggregate receipts for agricultural products. The food marketing bill is a descriptive macro measure showing the absolute and relative size of consumers' expenditures on food, or any particular food item, allocated to the marketing activities during the year. The bill is often decomposed into expenditures by commodities, marketing agents and corresponding cost and profit shares realized within the marketing sector. The size of the bill reflects not only what has been allocated to food marketing activities, but also total changes in the value of food products marketed. This incorporates prices, volumes, product mix, product form of food purchased by consumers. Hence the higher the demand and consumption of marketing services associated with food consumed, the larger the size of the bill.

Although the concept of the marketing bill continues to be useful in analyzing the decomposition of food expenditures, several limitations must be recognized:

- First, the bill is based on a sample rather than actual comprehensive data of consumer expenditures on food and corresponding "farm-gate" receipts for equivalent farm products.[5] No explicit allowance is made for the increasing incidence of integration between farming and food marketing activities.

- the bill provides a general long-term indicator of shares of expenditures allocated to primary agricultural producers and marketing firms. The bill cannot be used as a basis for short-term variations in the component of food prices.

- the bill does not separate the factors contributing to the make-up of the cost, i.e. volumes marketed, marketing services rendered, and prices paid intermediate inputs.

- the bill cannot be employed as a measure of equity or welfare among farmers and marketing agents.

The Marketing Bill remains a simple indicative measure of the allocation of consumer dollars spent on food. However, it is not a sufficiently sensitive measure to reflect the continuous changing nature of food marketing services demanded by largely urban consumers.

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[5]For further details relating to the method of calculating the Marketing Bill see "Review and Evaluation of Prices Spread Data for Foods," prepared for the Economic Statistics Committee, American Agricultural Economics Association; ERS, U.S. Department of Agriculture.

A definite upward trend has been observed in the relative size of U.S. Food Marketing Bill in the last decade (Table 1). For example, for the period 1972 to 1982 the Marketing Bill's share ranged between 62.8% in 1973 and 71.9% in 1982. The corresponding Marketing Bill for food expenditures for home consumption is somewhat lower and ranged between 57% in 1973 and 66.4% in 1982. This is because a substantially large proportion of marketing and catering services are associated with food eaten away from home at public eating places and institutions. In 1982, for example, 83% of consumers' dollars spent on food away from home was allocated to the Marketing Bill in comparison to 66% for food consumed at home.

TABLE 1. U.S. PERCENT DISTRIBUTION OF CONSUMER EXPENDITURES FOR DOMESTICALLY PRODUCED FARM FOODS AMONG MARKETING BILL AND CORRESPONDING FARM VALUE, 1971-1982

Year	All Food Expenditure		Home Consumption Expenditure	
	Mktg. Bill	Farm Value	Mktg. Bill	Farm Value
1972	67.4	32.6	62.0	38.0
1973	62.8	37.2	57.0	43.0
1974	63.5	36.5	59.6	39.4
1975	66.7	33.3	62.1	37.9
1976	68.2	31.8	62.4	37.6
1977	69.5	30.5	63.8	36.2
1978	68.1	31.9	62.6	37.4
1979	67.5	32.5	62.1	37.9
1980	68.9	31.1	63.2	36.8
1981	71.0	29.0	65.6	34.4
1982[a]	71.9	28.1	66.4	33.6

[a]Preliminary

Source: USDA Development in Farm-to-Retail Price Spreads for Food Products, Agricultural Economic Report Number 500, May 1983, p. 22

Preliminary estimates of Marketing Bill in Canada, based on commodity values and expenditures, reached 66.3%, 68.8% and 67.2% in 1976, 1977 and 1978 respectively. However, these estimates were derived by adding observed and estimated price spreads for major commodity groups without specific evaluation of the cost of the marketing functions involved and the cost of required inputs in food processing, distribution and retailing (PDR).[6] A more recent preliminary estimate, using input-output data of consumer demand for food commodity groups, suggests that Canadian Marketing Bill is about 66% of food expenditures for home consumption in 1979.

II.3.2 Farm-Retail Price Spreads

The farm-to-retail price spread provides another descriptive measure of the value of marketing activities associated with the consumer price of food. The spread is the observed difference between the retail price of food and the corresponding equivalent value (price) at the wholesale or farm level. Spreads are usually disaggregated into components allocated for each stage of the marketing channel. Implicit charges for processing, distribution and retailing are identified in terms of the sale price per unit at each stage minus the price observed at the preceding stage. Observed farm-to-retail spreads and their disaggregation reflects not only the prevailing current costs of marketing services performed by the PDR sector but also allocation for fixed costs, capital cost (overhead), as well as profits or losses incurred in food marketing.

Although current or variable costs of food marketing must be covered in the short and long term, allocations for fixed costs, depreciation, and profits can vary considerably in the short term. However, food marketing agents are expected to receive a return for fixed cost and achieve a normal rate of profit in the long term. Variable or out-of-pocket costs are usually recovered immediately by marketing firms in the form of prices of the food products offered for sale.

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[6] Estimation of the Canadian Marketing Bill by S. Kulshreshtha, et al, Department of Agricultural Economics, University of Saskatchewan, December 1980, p. 241.

The observed farm-retail price spreads are useful measures for food price monitoring at the various levels of the marketing channel. The price spread concept is a more relevant concept, than the food marketing bill, for consumers and other interest groups. The spread shows per unit price linkages at the various staqes of the food transformation system and at a point in time and place. Price comparisons can be made for the same commodity and among regions and periods of time.

Although farm-retail price spreads offer a number of advantages as "micro" measures they have a number of limitations:

- a given spread does not reflect aggregate revenue of sales by the various marketing agents nor the volume marketed at each stage. Prices by marketing firms are at least partially determined by inventory valuation adjustments and the magnitude of inventory turnover normally expected by these firms.[7]

- pricing of food products is often influenced by the nature of the product itself (e.g. perishables vs less perishable food products; single vs joint products). Pricing is also influenced by the number of food items handled by the marketing firm, where cross-commodity subsidization is often practiced as a merchandising activity.

- farm-retail food price spreads are often difficult and costly to estimate. Problems are often associated with the accessibility and release of the primary data required from private firms and particularly when these are highly concentrated.

[7] Inventory valuation affect output pricing and in turn is influenced by methods of commodity procurement and storage. Methods of commodity procurement range from spot or cash market purchase to acquisition and sales in the futures market. Contractual or discount transactions are other types of popular sales methods. Some inventory pricing methods used by marketing firms include Last In First Out (LIFO) pricing vs First In First Out (FIFO) pricing.

Several studies have been conducted in Canada in recent years on the farm-to-retail price spreads and price formation for specific commodities.[8] These studies and the methodologies adopted to calculate spreads need to be continuously revised and updated in order to be used effectively in price monitoring, changes and price allocations between farm and marketing agents. Identification and measurement of the variable cost elements contributing to the formation of price spread is an essential step toward explaining the behaviour of food prices.

II.3.3 The Food Marketing Cost Index (FMCI)[9]

The notion of the food marketing cost index (FMCI) is based on the assumption that operating costs involved in the processing, wholesaling and retailing of food are the most critical factors influencing food prices at the retail level. Since these variable costs have to be totally recovered by the marketing agents, changes in these costs would immediately be reflected in the final price paid by the consumer. The FMCI reflects the prices (costs) of a fixed quantity of inputs required in the food processing, distribution and retailing sector.[10]

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[8] Commodities covered in these studies include dairy products, beef, turkey and bread. See Agriculture Canada's Food Market Commentary, various issues.

[9] The PDR cost index advanced in this study can also be considered as a composite price index of variable inputs normally utilized in this sector. A purchased input becomes a production cost once it is purchased. For example, the prevailing wage rate can also be considered as the actual rate presently paid by employers. Some lags might exist between prevailing and actual wage rate paid, however, they are assumed to be insignificant.

[10] As in most indices, the FMCI does not account for possible substitution among inputs nor the changes which might occur in the quality or productivity of these inputs (e.g. labor, packaging material, and transportation). However, frequent re-estimation of the input weights used by the processing, distribution, and retailing sectors would minimize the effect of substitution on the behaviour of the index. Input weights might change as PDR agents move toward least expensive and/or most productive inputs to reduce total cost and maximize efficiency.

Costs such as hired labor, packaging, transportation, etc. are expected to be fully and immediately transmitted into the final retail price of food. The aggregated cost of food marketing can be calculated easily once the weight of each individual marketing input is estimated and the prevailing prices of these inputs are identified.

Other costs of food marketing however, may be committed for one year or more. Examples include long-term mortgages, leases on buildings and land, depreciation allowances, and other lump sum payment allocations associated with the conduct of marketing firms. Obviously, treatment of costs by any organization would depend on the accounting procedures followed.[11]

Net profit is excluded from the FMCI since it is a residual left after subtracting total costs from total revenues. In the short term net profit can be positive, zero or negative as it might be considered a reward (or penalty) accompanied with economic activities under a largely free market competitive environment.[12] In the short term net profit cannot be predicted. In the long run, however, net profit in the food sector is assumed to be comparable to that observed in other service oriented economic activities. Similarly since the FMCI is a quarterly index, it does not account for changes in the return on fixed assets and depreciation which are often associated with the structure and conduct of the industry over an extended period of time.

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[11] During inflationary periods, for example, a large number of fixed costs might be treated as variables where replacement value rather than acquisition cost is used as the basis for cost accounting. This implies that inflationary pressures might be "self-feeding" and particularly where all costs are considered variable and the "cost push" would be continuously compounding.

[12] Regulated pricing and marketing might fix (or reduce) profit at a certain level.

II.4 Formation of Food Prices

There are a large number of factors affecting the formation of food prices. The key however, is to:

- ascertain such effects;

- identify the normal direction of influence;

- estimate the magnitude of such influence; and

- approximate the time period required for each individual factor to take its effect.

Conceptually, factors contributing to the formation of food prices can be classified in terms of the length of time before they will affect food prices. Table 2 identifies short-term and long-term factors affecting food prices. A short term is theoretically defined as a period adequate to reflect less than fundamental changes in the price of food or the price structure upon which these commodities are produced and sold. For agricultural and food commodities the short-term influencing factors normally are confined to the "shelf life" of food and agricultural commodities. The crop or production year is usually the maximum period most of these products are stored.[13] During the short-term, the supply of almost all food products is predetermined or given. Similarly, during the short-term the demand for food commodities is expected to remain stable with little or no change in its sensitivity to price fluctuations.

Prices of raw farm commodities are more critical in the formation of some food prices than others. For example, short-term changes in the price received for eggs by farmers is expected to be reflected in the

[13] To measure observed and anticipated food price changes in the short-term, monthly and/or quarterly data are most relevant.

retail price. However, bakery products prices are not expected to vary with the variations in food grain prices within this limited period. A more direct and immediate effect on retail food prices results from variable-cost changes in food PDR activities, including the price paid for imported food.

Seasonality plays a key role in the formation of certain food products prices, particularly those which are highly perishable and/or have a short production season. Seasonality in price can also be induced by short-term demand factors such as pre-holiday season sales or winter-summer consumption patterns. Where seasonality in price formation is systematic and can be measured, a seasonal index might be constructed to account for this short-term effect.

The price paid for imported food products by the Canadian food wholesaling and retailing industry is another short-term factor affecting retail food prices. However, the magnitude of effect is hard to predict due to the large number of external as well as internal market conditions contributing to the behaviour of imported food prices.

In addition to the cited short-term factors influencing the formation of food prices, there still exist a number of uncertainties which can not be anticipated or accounted for on a timely basis. Market vagaries induced by adverse weather conditions often result in a great amount of speculation and price instability for example. The effect of such vagaries may be short-lived and are not necessarily transmitted in the consumer price index for food.

In the long-term, fundamental changes in the price structure of food might occur as a result of sudden or gradual shifts or adjustments in the supply of and demand for food at the domestic and international levels. Quantification of supply and demand variables affecting price formation over an extended period of time is one of the most essential steps in estimating the food price determination process.

TABLE 2. FACTORS AFFECTING THE FORMATION OF FOOD PRICES

Short Term	Long Term
- Prices of raw material (farm comm.)	- Supply and demand factors affecting food in general and individual products in particular
- Variable cost of PDR inputs	
- Merchandizing practices	- Demand side - Income - Tastes and preferences
- Seasonality	- Socio-economic characteristics (age, education, employment, lifestyles)
- Prices of imported food	- External demand
- Uncertainties, vagaries, and ensuing speculations	- Supply side - Technological development - Withholding and/or storage technologies - Natural conditions affecting production (uncontrollable) - Government regulations and international agreements - Industrial organization of the agriculture and food sector - External supply

II.5 Assumptions Underlying the FMCI

The calculation and subsequent utilization of the Food Marketing Cost Index is based on a number of explicit assumptions:

1. Input costs in the food marketing sector are major short-term contributors to food price formation.

2. Only variable costs are considered.

3. Only purchased (out of pocket) inputs are considered. For example, in-house advertising is not included in advertising costs.

4. Formation of food prices is largely a cost push phenomenon (rather than demand pull).

5. Little or no time lags are involved between changes in costs of purchased inputs and food prices.

6. The cost structure of food wholesaling and retailing is similar to that for other commodities.

7. There is a built-in high turnover activity in PDR activities (cost of merchandising).

8. FMCI deals with food consumed at home.

The study assumes that short-term price behaviour will approximate the raw material cost plus the variable costs incurred in food processing and distributing activities. This assumes that food price changes triggered by sudden demand pull factors are only random and exceptional, particularly in the short-term.

The FMCI is aimed at estimating the change in the price of non-food inputs required for operating food processing, distribution and retailing businesses. The index should reflect price changes of a most recent bundle of inputs purchased in food marketing. As with other indices, the FMCI does not reflect short-term changes in the quantity of inputs used. However, the effect of these is expected to be minimal due to the high degree of specialization and large scale operation of most marketing firms and the limited input substitution possibilities within a short period of time.

Although the FMCI measures the variability of input costs used in the PDR system, it must be recognized that in Canada, only a portion of farm commodities passes through all three stages of the marketing channel. The bulk of imported food products are delivered directly to food retailers and/or wholesalers. This is particularly true for fresh fruits and vegetables, processed food and other food items originating from tropical and semi-tropical regions.

The FMCI is also based on the notion that observed variations in marketing charges tend to reflect input costs more readily than do farm prices. This is due primarily to the nature of food marketing inputs which are primarily purchased inputs and not necessarily produced within te marketing firm (e.g. feed and forages production within a dairy or beef farm). Furthermore, the rapid turnover of products through processing, wholesaling and retailing would further reflect the dominance of the variable costs in the total cost of performing marketing operations.

Prices of agricultural commodities at the primary level are largely determined in commodity markets which are national and/or international. These markets often display a high degree of volatility with little or no systematic pattern or an established trend. With the exception of nationally regulated commodities, farm prices do not necessarily reflect cost of production to primary producers within a

given crop year. On the other hand, prices and costs of marketing inputs and services tend to be more stable in the short-term with steady upward movement over time. For example, wages, salaries, packaging materials, and utilities are usually negotiated for a period of time through contractual agreements. As a result, marketing costs are generally known and accounted for by marketing firms on a continuous and systematic basis. Given the inflexibility of most marketing input costs towards downward pressures, the marketing cost of food is most likely equal to or greater than that reached in a previous period.[14] This is particularly the case for labor inputs where real wages and salaries are usually maintained or improved through periodic negotiations and settlements with labor unions. Seasonality is an unlikely factor affecting the level and behaviour of marketing costs within the year.

II.6 Classification of Costs

Identification and classification of costs in food PDR industries is shown in Table 3. Variable costs, which are included in the FMCI, are listed in the order of their importance in relation to total variable expenditures. It was expected that between two-thirds and three-fourths of total variable costs in the food marketing sector would be accounted for by labor, containers and packaging, transportation, and advertising.

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[14] This implies that:

$$Mt = Mt\text{-}1 + Pt\ Wt$$

where: Mt = Marketing cost during current period
$Mt\text{-}1$ = Marketing cost during previous period
Pt = Current prices of marketing inputs
Wt = Current weights of marketing inputs

Fixed costs, such as depreciation of assets, do not vary proportionately with the volume of business. Allocation of these costs must be covered in the long-term in order to prevent capital loss or foreclosure. In the short-term, however, allocations for fixed costs might be zero or partial. Similarly, residuals include benefits retained by business enterprises in the long-term in order to sustain, develop and expand their economic activities in the long-term. These residuals, however, are not always positive and cannot be anticipated and measured over a short period of time.

The total Food Marketing Cost Index represents a ratio of current cost of a given bundle of marketing inputs divided by the corresponding cost in a base period.[15] Processors, wholesalers, and retailers of food products are buyers or users of marketing inputs. The price paid for these inputs is usually given at the prevailing market rate in terms of prices or costs for products, wages, packaging material, transportation, energy, and other current inputs such as short-term interest payments, repair and maintenance.[16]

The construction of the FMCI is based on the assumption that variable or operating costs are the key factors contributing to the observed behaviour of food prices. The identification of these variable costs at each of the three stages of the marketing channel, PDR, and measuring the corresponding weight of each individual cost at each stage are the preliminary essential steps in the construction of FMCI. These steps are outlined in section III.

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[15]This is analogous to the CPI and CPI-Food indexes where a Laspeyres formula is used based on a given basket of essential products and services identified from the observed pattern of consumption (e.g. 1982 Urban Family Food Expenditure survey). The Laspeyres formula can be expressed as follows: $Ln = \frac{Pn\ Qo}{Po\ Qo}$

where: Ln = price index in the current period
Pn = price in the current period
Qo = quantity in the base period
Po = price in the base period

[16]As stated earlier there are other fixed or less variable costs which would eventually have to be renumerated in order to maintain the food system in operation over extended periods of time. These costs include depreciation of assets, long-term return to capital investment, and extended rental and insurance costs. Annual profit (loss) is the accounting residual between the value of the output sold and the total allocations for variable and fixed costs associated with the operation of the marketing enterprise.

TABLE 3. CLASSIFICATION OF COSTS IN FOOD PROCESSING AND DISTRIBUTING INDUSTRIES

Variable Costs

- Labor
- Containers and packaging
- Transportation
- Travel and promotion
- Fuel and power
- Rent and storage
- Maintenance and repair
- Taxes and insurance
- Business services
- Utilities
- Supplies

Fixed Costs

- Depreciation (Overhead)
- Long-Term Interest payments (Mortgages)
- Long-Term rent (Leases)

Residuals

- Profit (Loss) adjusted for subsidies

III METHODOLOGY

The Food Marketing Cost Index, as indicated in the previous section, is a measure of the percentage change through time in prices of non-food inputs used by the food processing; wholesaling and retailing sectors in the marketing of food for home consumption. The inputs represent the purchases of these three sectors in the most recent year for which data are available. These expenditure data are the basis for the weights for the purpose of constructing the Index. For example, after raw material, labor constitutes the largest single expense item. Therefore, wages would be weighted most heavily in the food marketing cost index.

The objective of this section:

- to provide a brief description of the data sources, pointing to their merits and limitations; and

- to discuss the assumptions and procedures used to construct the weighting diagram.

III.1 Data Sources and Definitions

Several data sources offered potential for the development of the weighting diagram. The narrowing down of choice involved establishing criteria and evaluating each data source against them.

Since many data sources provided information on the food sector, certain criteria were developed to enable rating the available sources for the specific purpose of building a weighting diagram. Answers to the following type of questions were evaluated:

1. Does the data describe the cost structure of the Canadian food processing, wholesaling and retailing (PDR) sectors?

2. Is the information complete on all operating costs in food PDR?

3. Is the cost structure broken down to a level at which corresponding price series are available?

4. Does the data allow for periodic updating of weights?

5. Does the data allow for linking the costs in the processing, wholesaling and retailing sectors?

A brief discussion of the data sources examined will illustrate the selection process for the project.

The Census of Manufacturers is an annual survey of the manufacturing industries of Canada conducted by Statistics Canada. Data collected include principal industrial statistics such as shipments, employment, salaries and wages, cost of materials and supplies used, inventories, goods purchased for resale as well as commodity data including shipment or consumption of particular products (Table 15, Appendix A). Statistics Canada obtains this data through mailed questionnaires for the large manufacturers and establishments, and from financial statements or income tax returns of small manufacturing establishments. Values recorded are laid-down cost to the reporting unit, including transportation charges by contract carriers, sales taxes, duties, discounts, allowances and returned sales. As such, the data meets the first and fourth criteria but falls short on the others.

A major limitation is that the data refers only to commodity items or physical goods and not to costs of services or overhead charges such as advertising, insurance or interest. Since these latter costs are a part of total marketing costs, the data is incomplete for the weighting diagram (criterion #2). The data provide considerable detail for packaging materials purchased, but operating, maintenance

and repair supplies are presented as an aggregate. Since representative price series is not available for this level of aggregation, the data does not meet the third requirement. Finally, the Census of Manufacturers by definition does not cover food wholesaling and retailing sectors.

Corporation Financial Statistics (Catalog 61-207) Statistics Canada publishes this annual report which contains data on aggregate balance sheets, income and expense, profit and retained earnings information for corporations. Derived mainly from corporation income tax returns submitted to Revenue Canada, Taxation, the data does not include financial statements for unincorporated businesses.

For the purpose of deriving a weighting diagram, the "Income and Retained Earnings" statistics were examined. Data in these statements is highly aggregate for material inputs. For example, the first item in Table 14 Appendix A, is materials. It is a derived residual and represents cost of sales less direct and indirect labor costs, building repairs, depreciation and property taxes. Its main component, therefore, is cost of materials used in manufacturing or the cost of goods purchased for resale in the wholesale and retail industries. Other items that it includes are costs of light, heat, power, insurance, transportation, etc. While raw material costs are not included in marketing costs, energy and service costs are of significant importance in PDR operating costs. The data, therefore, required that a procedure be derived for separating these component costs. Furthermore, Corporation Financial Statistics includes data on salaries and wages and repairs and maintenance. Here again salaries and wages do not include employee benefits such as group insurance, pensions, workmen's compensation, unemployment insurance, etc. These benefits are included in "other expenses" which is not broken down for detail.

Wholesale Food Distributors Annual Financial Comparisons, This is an annual survey of food distributors carried out since 1961 by Bartz, Postl and Associates Inc. For the most part, the results reflect business statistics of U.S. food wholesalers, although a small proportion of Canadian wholesalers also participate in the survey. For example, the 1980 survey included 40 U.S. food wholesalers and 2 Canadian. The total sales of the participating wholesalers were $4,668 million U.S. of which the Canadian wholesalers grossed $133 million U.S. or 2.8%. Total sales of all Canadian food wholesalers were more than $16,512 million in 1979 (Table 4). Thus the survey provided results for about 1% of the food wholesaling business in Canada. This was not considered adequate representation of the Canadian industry. Nonetheless the results of the 1979 survey presented in Table 5 along, with results for a 1982 survey show the relative stability of the cost structure over time.

TABLE 4. PRINCIPAL STATISTICS FOR 2505 FOOD WHOLESALE MERCHANTS, 1980

	$ Thousands
Volume of Trade[a]	16,512,535
Purchases[b]	14,545,546
Year End Inventories	1,068,698
Salaries and Wages	696,078

[a]Volume of trade includes value of goods manufactured, receipts from repairs and services, revenue from customs manufacturing, rental revenue from machinery and equipment, warehousing and other services, commissions earned for buying and/or selling on commission basis as well as the value of the goods bought and/or sold on commission

[b]Purchases include goods purchased for resale as well as value of components, semi-finished goods and materials bought for manufacturing, construction, sub-contract work and repair.

Source: Statistics Canada, Corporation Financial Statistics, Catalog 61-207.

TABLE 5. EXPENSE STRUCTURE OF FOOD WHOLESALERS IN 1979 AND 1982

	1979 % of total operating expenses	1982 % of total operating expenses
Payroll	60.1	57.6
Supplies	3.8	3.2
Utilities	2.4	3.2
Communication	1.1	1.1
Travel	1.7	2.3
Service Purchased	1.2	1.3
Promotion	0.5	0.4
Professional Services	0.8	0.8
Interest	4.9	4.7
Insurance	2.1	2.6
Taxes and Licenses	3.0	4.3
Rents	1.7	2.3
Equipment Rentals	4.7	4.9
Repairs	3.3	5.2
Miscellaneous	7.2	4.2
Administrative	1.3	1.9

Source: Bartz, Postl and Associates Inc. Wholesale Food Distributors Annual Financial Comparison.

The Bartz study was not considered suitable for constructing the wholesale weighting diagram in this study because (a) it represented less than 1% of the Canadian food wholesalers, (b) its cost categories did not correspond with available data for the other two PDR sectors, processing and retailing and (c) it did not provide enough detail for the purpose of associating price series with component weights.

Food Industry Overview 1980 (Canadian Grocery Distributors' Institute). The Institute, in cooperation with the Canadian Grocer magazine, undertook a survey to estimate food retailers' expenses for 1979. Table 6 presents non-food expenditures of retailers as a percentage of sales (column 1). These percentages were used to derive expenditures as a percentage of operating costs (column 2). Although the input aggregation level was lower than in some sources discussed above, it did not provide as much detail as the Input-Output tables discussed next. This source does not fully meet the set criteria either.

Input-Output (I-O) Tables I-O tables are available on an annual basis and are a part of the System of National Accounts. They provide structural detail on industries and on goods and services. The I-O tables cover 602 commodity and primary inputs; 191 primary, manufacturing and service industries; and 136 final demand categories. (For details see Input-Output Structure of the Canadian Economy, Catalog 15-201E.) Of particular importance to the construction of the weighting diagram for the Food Marketing Cost Index were the input tables for 13 food processing industries[17], wholesale trade and retail trade. Inputs values are available at producer prices as well as purchaser price. These inputs are estimates of the expenditures on commodities that are used in a particular year. Inputs purchased but not used are adjusted for in inventory. This meets the definition of current operating costs. The difference between the purchaser price and producer price is the sum of margins associated with a particular product.[18]

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[17] Slaughtering and meat processors; poultry processors; dairy factories; fish products industry; fruit and vegetable processing; flour and breakfast cereals industries; biscuit manufacturers; bakeries; confectionery manufacturers; sugar refineries; vegetable oil mills; miscellaneous food industries; and soft drink manufacturers.

[18] Margin data provided are: wholesale, retail, transport, storage, tax, pipeline and gas.

TABLE 6. AVERAGE EXPENSES AS A PERCENT OF SALES AND OPERATING COSTS IN FOOD RETAILING, 1979

	Expenses as a percent of sales	Expenses as a percent of operating costs
Wages, salaries and benefits	8.85	57.17
Packaging supplies	0.70	4.52
Accounting	0.19	1.23
Advertising	0.89	5.77
Cleaning store	0.10	0.65
Utilities and telephone	0.80	5.17
Insurance	0.18	1.16
Repair and maintenance	0.51	3.29
Rent or occupancy	1.31	8.46
All other expenses	1.95	12.60
Total operating costs	15.48	100.00

Source: Canadian Grocery Distributers Institute, Food Industry Overview, 1980 gives the percentages in the first column on the basis of a survey. The second column presents the components as a percentage of total operating costs.

In general, the I-O tables satisfy the criteria developed above[19] and have additional attributes that are not present in the other data sources. In particular:

- Data from the I-O tables can be used to derive the weighting diagram for all three PDR sectors as well as the linkage factors. It is important to have a unified food data source since the objective of the Food Marketing Cost Index is to provide analysis of cost changes as food items move through the system.

[19] Statistics Canada is endeavoring to make the industry selling price indexes correspond to commodity classification in the I-O data. The target date for this to become operational is 1986. This would reduce the judgement factor in associating price indexes with commodity inputs.

- I-O data are available on tapes, which means that calculations of weights for each updating are simplified.

Timeliness of the data is a problem, however. The most recent I-O tables available in 1983 were for 1979. These were used in the weighting diagram for the Food Marketing Cost Index. That means there was a lag of 3 to 4 years between the time when economic activity took place and when the data was published.

III.2 Identification of Costs and their Relative Importance

III.2.1 Food Processing

In 1979 the food processing industry used 132 inputs, each valued at one million dollars or over. Their values at purchase price are presented in Table 15 Appendix A. The food marketing cost index includes only current operating costs. Therefore, food purchases, profits, subsidies and depreciation were excluded. The entry "net income of unincorporated businesses" was split between wages and profits. This item includes net earnings of working proprietors, single or in partnership. As such it includes elements of salaries as well as profits. Since current operating costs have been defined to exclude profits, only the wages and salaries portion was included. Table 15 shows that "wages and salaries" (item 599) and "other operating surplus" (item 602) are in the ratio 64.4 to 35.6. These ratios were applied to the $39,766 million against "net income of unincorporated businesses". In the weighting diagram $25,609 million (64.4%) was added to salaries and wages and the balance ($14,157 million) was recorded as profits.

The table also shows that, of the 132 inputs used by the food processing industry, 67 were current operating costs (Table 15). Total expenditure on these operating costs amounted to $6,793,897 thousand in 1979. Each input's share of operating costs was its preliminary calculated weight. These weights are preliminary because a later revision was made to include transportation margins.

III.2.2 Food Wholesaling

Due to data constraints, some assumptions had to be made for constructing the weighting diagram for food wholesaling:

1. It was assumed that the operating cost structure of food wholesaling is similar to the average cost structure of all wholesale trade. This assumption was necessary as no data source was available for the Canadian food wholesaling sector, in the detail required for the study.[20] However, food is fairly heterogeneous with respect to shelf-life, bulk and handling requirements. While nearly all grocery items (non perishables) are channelled through wholesalers, a significant proportion of perishables such as dairy is shipped directly from processor to retailer. The 1982 survey of Bartz, Postl and Associates indicated that about 60% of the sales of food wholesalers was grocery items, 15% from meat and the balance from other foods and non-foods. This lends credibility to the assumption that the nature of food wholesalers' activities is not vastly different from all wholesalers in the Canadian economy. The Bartzi, Postl and Associates study of 1979 (page 26) indicates that payroll accounts for 60.1% of operating costs in food wholesaling. This is similar to the 60.3% percent for labor costs obtained in this study.

2. The wholesaling industry's primary output is wholesale margins. It also engages in repair service and rentals and manufacturing, but to a significantly lesser degree. Wholesale margins (item 35, Table 16, Appendix A) account for 87.7% of the wholesale industry's output; repair service and rentals (items 38, 39, 40), 9.1%; and the balance which is manufactured products, 3.2%. Ideally, the marketing cost index should reflect input costs of

[20] This same assumption is used by the US Department of Agriculture in deriving weights for its Food Marketing Cost Index. Harp H.H. The Food Marketing Cost Index, Technical Bulletin No. 1633, pp. 17

providing wholesale margins only. I-O tables, however, give the inputs by institutions and not by the functions performed. As such, it is not feasible to separate out expenditures on inputs was used in its wholesaling activity. Therefore, it was assumed that the wholesale industry uses the same technology in all its functions. Since "wholesale margins" and "services and rentals" are both service oriented and account for nearly 97% of the industry's output, this assumption was not expected to introduce bias in the index.

3. For the food processing industry, all raw materials used in manufacturing food had been excluded. This assumption was extended to wholesaling where it also excluded semi-finished goods and materials bought for manufacturing, construction, sub-contract work and repair.

   Thus, of the 121 inputs (valued at $1 million or over) used by wholesale trade in 1979, 55 were operating costs. Their values and shares (preliminary weights) are presented in Table 17, Appendix A.

III.2.3 Food Retailing

Since data constraints for the food retailing industry were similar to those for food wholesaling, the same three assumptions were extended to this sector, i.e. the cost structure of food retailing was assumed to be similar to that for all retailing. (An independent study of food retailers, Food Industry Overview, estimates the largest component - wages, salaries and benefits;

- "as a percentage of operating costs to be 57.2, compared to the 62.5% obtained in this study."

The production functions for all outputs of the retail trade were assumed to be the same, and finally, raw materials and semi-finished products used in manufacturing, repair, etc. were excluded. Of the 74 inputs used by retail trade, expenditures on 47 items were regarded as current operating costs. Their values and preliminary weights are presented in Table 18.

III.3 Weighting Diagram

The above procedures identified input cost components for the preliminary calculation of the weights. These were considered preliminary because they did not include the transportation costs reported in the I-O tables as Transport margins on consumer expenditures (Table 19, Appendix A).

To calculate the final weighting diagram required these additional steps:

1) estimation of total costs of processing food for home consumption, wholesaling food and retailing food;

2) allocation of transport margins in proportion to the dollar costs of all other operating costs associated with processing, wholesaling and retailing; and finally

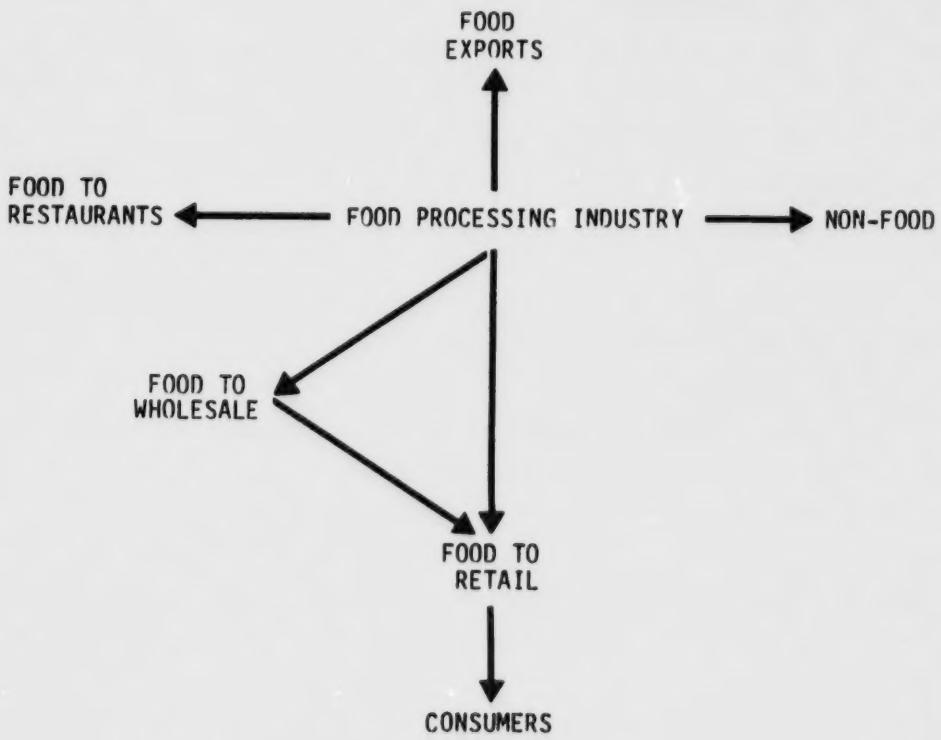
3) recalculating the weights after adding the allocated portion of Transport Margins.

III.3.1 Total Cost of Processing Food

Preliminary estimates of operating costs for the food processing sector were obtained by adding up the purchases of inputs by the 13 food processing industries. The resulting cost of $6793897 thousand

(Table 15, Appendix A) was adjusted down to allow for the fact that food industries output includes items not considered food for home consumption.

The food processing industry produces food as well as a small quantity of non-food outputs. The food output may be exported, sold to restaurants, or to grocery stores (see flow chart). The procedure for obtaining the various shares is explained below and the calculations summarized in Table 7.



Food/Non-Food Ratio

In 1979, the food processing industry produced goods and services valued at $21.680 million (Table 20, Appendix A). Of this, $1.584 million was considered non-food output. The balance of $20.096 million was the food output. Therefore the food to non-food ratio of the processing industry's output was 92.69 to 7.31.

Food Exports

Total exports of processed foods were obtained from the final demand matrix (Table 21, Appendix A). This amounted to $2,355.493 million. Thus, 11.72% of the processing industry's food output is directed to the export market and 88.28% is utilized in the domestic market.

Food to Restaurants

Food purchases of the food and accommodation industry were obtained from the input matrix. These purchases were adjusted for their import composition (Table 22, Appendix A). For example, the food and accommodation industry purchased $706 million worth of meat in 1979 (item 52). The import coefficient[21] (ratio of imports to total use) for all meat for 1979 was 0.062921. Therefore, it was assumed that the food and accommodation industry obtained about 93.7% or $661.9 million of its meat requirements from domestic sources and the balance, or $44.1 million from imports. Similar calculations were carried out for all other food purchases of the food and accommodation industry and the total value of food products purchased from domestic processors was estimated to be $1 998.265 million.

[21] Import coefficient $u = \frac{m}{Bg + e} + Xr$; where m is imports; Bg is intermediate use; e in the sum of consumer expenditure, fixed capital formation, additions to inventory and government expenditures; and Xr is re-exports.

Food to Consumers

This was an estimate derived by substracting the food to restaurants and to exports from the total food output of the processing industry. This adjusted output of $15,742,242 thousand was the food value that was eventually retailed and was 72.61% of the food processing industry's total output (Table 7). The $6,738,97 thousand estimate of operating costs was adjusted down by this factor to give costs of processing food for home consumption as $4,933,049 thousand.

TABLE 7. ESTIMATES OF THE FOOD PROCESSING INDUSTRY'S OUTPUT FOR 1979

	million dollars	Total % of Output	% of Food Output
Total output	21 680	100.0	
Non-food	1 584	7.31	
Food	20 096	92.69	100.00
Exports	2 355.493	10.86	11.72
Restaurants	1 998.265	9.22	9.94
Retail Food	15 742.242	72.61	78.34

Source: Derived from Input-Output data.

III.3.2 Total Cost of Wholesaling Food

Costs for food wholesaling were derived by summing up wholesale margins on purchases of the food marketing sector (Table 23, Appendix A) and wholesale margins on consumer purchases (Table 19, Appendix A). This was adjusted down for profits and depreciation as follows:22

	$ Thousands
Wholesale Margins on intermediate inputs (Table 23)	$ 220,793
Wholesale Margins on consumer purchases (Table 19)	1,019,401
Total	$ 1,237,887
Minus (19.4%) profits and depreciation	240,150
Wholesaling costs	$ 997,737

22Based on food retailing and wholesaling for 1979 that from Statistics Canada, Corporate Financial Statistics, Catalogue No. 61-207, Annual.

$$= \frac{\text{net profit before taxes and non-recuring items + depreciation}}{\text{sales-cost of sales (goods for resale)}} \times 100$$

equals 19.4 for food wholesaling and 13.8 for food retailing Table 7 shows that $\frac{\text{net profit}}{\text{operating cost}} + \frac{2.02}{15.48} \times 100 = 13.1\%$

23Wholesale margins of the processing industry were scaled down to include only the portion used for processing food for home consumption.

III.3.3 Total cost of retailing food

The procedure for estimating food retailing costs parallels that for food wholesaling.

	(thousand $)
Retail margins on intermediate inputs	0
Retail margins on consumer purchases (Table 19)	3,794,454
Minus (13.8%) profit and depreciation	523,635
Retailing costs	3,270,819

III.3.4 Allocation of Transportation Margins

Transport margins were allocated to the other three sectors because no acceptable procedure was available for determining the cost structure of the transportation industry. Transport margins on consumer purchases of food totalled $434,901 thousand (Table 19, Appendix A). These were allocated to food processing, wholesaling and retailing in the proportion of their other operating costs.

TABLE 8. OPERATING COSTS INCLUDING TRANSPORT MARGINS

	Processing	Wholesaling	Retailing	
	- thousand dollars -			
Operating costs without transport	4,933,049	997,737	3,270,819	9,201,605
Distribution weight	0.5361	0.1084	0.3555	1.0000
Allocation of transport margins	233,151	47,143	154,607	434,901
Total operating costs (lines 1 + 3)	5,166,200	1,044,880	3,425,426	9,636,506

Operating costs without transport (line 1, Table 8) were allocated to the respective cost components in the three sectors using preliminary weights. Transportation costs were then added and final weights derived using total operating costs (line 4) as denominators for the respective sectors. These components were classified into 11 cost categories.[24] The final weighting diagrams are presented in Tables 24, 25 and 26 of Appendix A.

III.4 Discussion of Group Weights

A summary of the weights is presented in Table 9. The rationale for combining wholesaling and retailing is that many food retailers are now vertically integrated to the wholesaling level and the weights for the individual sectors may be biased. Labor cost in food marketing amounted to 53.98% of total operating costs. The next largest component was containers and packaging, 10.82%.

III.4.1 Sector Weights

The food wholesaling-retailing sector is more labor intensive than the food processing sector. Sixty-one percent of the operating costs are allocated to labor in wholesaling-retailing and 48% in processing. Containers and packaging on the other hand comprise 19% of costs in food processing and only about 2% in wholesaling and retailing. Metal and paper packagings are the most important (15%) with the balance (about 4%) allocated to plastic, glass, wood and textile containers.

Rent and storage are more important in the wholesaling-retailing business than in the processing sector. In the processing industry building and equipment are generally purchased assets whereas in wholesaling and retailing these are typically rented items. This also explains why maintenance and repair expenses are more important in

[24] Labour, containers and packaging, transportation, travel and promotion, fuel and power, rent and storage, maintenance and repairs, taxes and insurance, business and other services, utilities, and supplies.

food processing. Repair costs to machinery are incurred by the processors as they own the equipment. If wholesalers and retailers rent equipment, repairs would be the responsibility of the leasing companies. Shares for other groups are small and not notably different.

III.4.2 Comparison with weights for the U.S. marketing sector

Although the present study is a first attempt at constructing the weighting diagram for Canada, several studies were done on the U.S. food marketing sector. The U.S. Department of Agriculture publishes quarterly indexes of food marketing costs using weights presented in Table 10. The Canadian cost weights fall near those for the U.S. food marketing sector for several components. The weights for labor, energy and packaging are different, however.

Whereas the weight for transportation for Canada is below the range for U.S., that for advertising is above the range. This probably reflects the fact that travel costs are grouped with advertising for Canada. In the U.S. travel comes under transportation. The weight for energy is higher in the U.S. weighting diagrams because it reflects the cost structure before the energy crisis of the 1970s and the subsequent rise in energy prices. Energy prices in Canada were sheltered from world price increases until 1981. The lower weight for pa kaging is less for Canada probably reflects the fact that a significant proportion of the food sold in Canada is imported pre-packed. This reduces the packaging costs of Canadian wholesalers and retailers.

TABLE 9. COMPONENT WEIGHTS

	Processing	Wholesaling	Retailing	Total Marketing[a]
Labor	0.4769		0.6199	0.5432
Containers and Packaging	0.1903		0.0169	0.1099
Transportation	0.0489		0.0545	0.0515
Travel and Promotion	0.0757		0.0609	0.0688
Fuel and Power	0.0448		0.0581	0.0510
Rent and Storage	0.0214		0.0774	0.0474
Maintenance and Repair	0.0509		0.0150	0.0342
Taxes and Insurance	0.0182		0.0277	0.0226
Services	0.0409		0.0357	0.0385
Utilities	0.0089		0.0163	0.0123
Office supplies & Other Supplies	0.0232		0.0178	0.0207

[a]The weights for processing, wholesaling and retailing are 0.5361, 0.1084 and 0.3555 respectively.

TABLE 10. RELATIVE IMPORTANCE OF INPUT COSTS INCURRED IN MARKETING FOOD IN CANADA AND THE U.S.

Input	Canada	U.S.A.[a]
	- % -	
Labor (including benefits)	54.32	46.8
Containers and Packaging	10.99	15.1
Transportation	5.15[b]	9.9
Travel and Promotion	6.88	4.9[c]
Fuel and Power	5.10	7.9
Rent and Storage	4.74	3.3
Maintenance and Repair	3.42	2.7
Taxes and Insurance	2.26	1.3
Services (including short term interest)	3.85	5.1
Utilities	1.23	1.0
Office and Other Supplies	2.07	2.0

[a]U.S. Department of Agriculture, The Food Marketing Cost Index, A new measure for analysing food price changes, Technical Bulletin No. 1633, August 1980.

[b]The transportation weight is lower for Canada than for U.S. for several reasons: (1) For Canada, business travel is included in "Travel and Promotion" but for the U.S. it is included in "Transportation"; (2) While the Transportation weight for Canada is derived from Input-Output Tables, the U.S. weights are derived from Marketing Bill weights estimated originally on the basis of ton miles and freight rates. (3) A higher percentage of Canadian food is imported than in the U.S. and since the points of entry to Canada are close to major population areas, it reduces total transportation costs in Canada.

[c]Does not include travel.

IV PRICE DATA

This section details the selection procedure for the various price data series used in the construction of the Food Marketing Cost Index. Where possible Statistics Canada data sources were used because they more closely conform to the data sources used to derive the weights. Statistics Canada data also meet the criteria for timeliness, consistency, validity and ease of access.

As the Index is to be used on a quarterly basis as a tool to explain food price behaviour, the price series included had to be available on a quarterly basis or more frequently. This criterion was met in all cases except "business services" and "advertising", where only annual data is published.

Because some data was available in unit measures while some was indexed to varying bases, all data was rebased to 1981=100. Finally, all the data series required are available from mid-1977 to date. Table 27, Appendix B contains price series used and the Cansim matrix numbers for all inputs except transportation. The price series for transportation was obtained from the Traffic and Tariffs Branch of Canadian Transport Commission.

IV.1 Input Price Data

Labor (54.32%)

Labor carries 54.32 percent of the weight in the total index and is approximately 5 times larger than the next largest input -- containers and packaging. Thus, the labor price data will be a major determinant in the performance of the index.

The Statistics Canada Publication 72-002, Employment Earnings and Hours provides monthly data on wage earnings for food processing, food wholesaling and food retailing. A major structural revision to the Statistics Canada Employment Earnings and House survey in March 1983 causes discontinuity of the series in terms of levels. However, as the FMCI is analyzing change rather than levels, it is possible to link the two series using the March 1983 overlap data as the bench mark. Thus, the data prior to March 1983 is adjusted using the bench mark and the new linked series is indexed to 1981 = 100.

The price series used at each appropriate level, food processing, food wholesaling and food retailing is "average weekly earnings, including overtime - all employees". No individual data series was available for supplementary income. The weight for this category was added to that for wages and salaries.

Containers and Packaging (10.99%)

The weight of 10.99 percent makes this input cost category the largest group component after labor. In general, marketing firms pay wholesale prices for most inputs. Thus, the input cost categories within the group Containers and Packaging, were matched with specific Industrial Selling Price Indexes, (Industry Price Indexes, Statistics Canada, Catalog 62-011).

Transportation (5.15%)

Despite the importance of this industry there is a paucity of price information publicly available.

One data source, the Canadian Transport Commission (Traffic and Tariffs Branch) collects data on rail freight rates for selected commodities between cities. It is assumed that, for longer inter-city transport routes, all land modes must maintain some measure of

intra-transportation competitive rate structures. Thus, the cost of moving beef (a major commodity), fresh or frozen, between Calgary and Montreal was chosen to proxy changes in transportation rates.

Travel and Promotion (6.88%)

The Consumer Price Index for travel/holiday lodging in a hotel/motel was used to proxy business travel costs. While a business version of this index would exclude package deals, no such index exists. However, this CPI index is published monthly and must, in the longer run, reflect the same cost changes that would affect business travel.

For the input postal services the CPI item "Postage" was used to monitor this input.

Although advertising is employed by all three market participants and in dollar terms may exceed $500 million, a direct composite price index for advertising rates is not available. However, an implicit price index for advertising services (Statistics Canada, Catalog 61-213 GDP by Industry) is available on an annual basis; the most recent data as for 1982. Quarterly data is being derived on a linear interpolation basis. A correlation test between this implicit price index and the CPI-All Items Excluding Food indicated that the CPI-All Items Excluding Food could be used as a proxy for the missing current observations. That is, the movement for the implicit price index for advertising in the most recent periods is obtained by applying the change in the CPI-All Items Excluding Food to the last data point. The actual data, published in late 1984, will replace the estimated data series.

Fuel and Power (5.10%)

Industrial Selling Price Indexes have been used to proxy the cost inputs for fuel and power. (Statistics Canada Catalog 62-011, Industry Price Indexes).

Rent and Storage (4.74%)

For two of the cost inputs, rental of autos and trucks and rental of machinery, the major group ISPI "Motor Vehicle Manufacturers and Machinery Industries" was used to proxy the costs. Changes in product prices are primary factors in determining rental costs for machinery; the actual rental charges are often negotiated on a private basis.

No convenient price data exists for the other two inputs in this group, storage and other rent. As the cost of capital can be a major determinant in the decision to rent or purchase, an interest rate was used to measure these storage costs. The interest rate used is the Chartered Bank Prime Business Loan Rate (Bank of Canada Review). For the 'other rent' item, an ISPI for refrigeration and air conditioning equipment was used. Retailers in particular would rent or purchase significant quantities of refrigeration and air conditioning equipment.

Maintenance and Repair (3.42%)

This group consists of a repair service and a material portion. For the material portion a major grouping of the ISPI - Metal Fabricating Industries - can be used to proxy changes in repair materials. The service component costs are being proxied by using the Home Owners' Repair and Maintenance Price Index from the Consumer Price Index. Again, the assumption is that, in the absence of any distinct business cost survey data, the retail consumer cost would correlate to changes in prices paid by marketing firms.

Taxes and Insurance (2.26%)

In the absence of any regular series on business costs for these inputs, the CPI for Property Taxes, and the CPI for Insurance were used.

Services (3.85%)

Business services are most difficult to price because they are established privately between firms. Moreover, the variety of services used by a firm varies widely from bank services to laundry services. For the period to 1982, an annual implicit price index for "business services" is available from Statistics Canada (Catalog 61-213, GDP by Industry). Quarterly data is obtained on a linear interpolation basis. The 1983 annual data become available during the fourth quarter of 1984. As a current measure of the change in business services costs, the change in the CPI-All Items Excluding Food index will be used to adjust the latest Implicit Price Index. The CPI is frequently quoted as an overall measure of cost changes in the economy.

When the Implicit Price Index for business services becomes available, it will be substituted for the estimated series.

Utilities (1.23%)

While no measures of utility costs to business firms exist, individual Consumer Price Indexes do provide measures of various utility costs to consumers, namely the CPI-Telephone Service and the CPI-Water Services.

Office and Other Supplies (2.07%)

Supplies of materials are generally purchased at wholesale prices by marketing firms. Thus, commodity specific ISPIs have been matched to the purchased supply inputs. For details see Appendix II.

IV.2 Data Limitations

The two components most likely to benefit from improved price proxy data are 'advertising and promotion' and 'business services'. Both these components are classified as services, and, although services are recognized as an important growth industry, few statistics on its price structure are available. The current monitoring series for both components are implicit price indexes which are nearly two years old before being published. Thus, the use of a second proxy to track the primary is necessary but also undesirable. The availabitility of a continuous data series for both these inputs would likely improve the accuracy of the monitoring ability of these components in the food marketing cost index.

Substitute data series for other components of the FMCI will be analysed as they become available and incorporated whenever and wherever they improve the accuracy of the index.

V RESULTS

Tables 11 and 12 present the results of the FMCI for the period 1978 to 1983. The largest annual increase in the total FMCI was 11.3% in 1981, and the smallest increase was 6.3% in 1983.

Annual changes in the overall FMCI are strongly influenced by changes in the labor index. The largest annual increase in the labor index was 11.3%, in 1981. The smallest increase was 7.5%, in 1983.

The index for containers and packaging had its largest year over year increase in 1980 (14.7%) but by 1983 the rate of increase had slowed to 3.6%. Although manufacturers of packaging materials faced higher costs for labor and energy in 1981, it is likely that the demand for their products decreased as the economy slowed down from its growth rates of the late 1970s.

The fuel and power index showed double digit increases for the period 1978 to 1982 before decreasing to an 7.9% increase in 1983. Higher energy prices arising from Canadian adjustments to the world price of oil were mainly responsible for these increases.

The sharp rises in energy prices, particularly the 23.4% increase in 1981, also impacted on several other indexes in the FMCI. For example, higher energy prices increase transportation and travel costs, and to a lesser extent costs for petroleum based packaging materials.

A Comparison of the Canadian and U.S. Food Marketing Cost Indexes

Although different in methodology, weighting diagrams and representative price series used to construct the index, the two data series are intended to measure a similar chain of marketing events in the two countries. Table 12 is a comparison of the Canadian and U.S. Food Marketing Cost Index. Table 30, Appendix C presents the disaggregate U.S. Food Marketing Cost Index for the period 1978 to 1983.

TABLE 11. THE CANADIAN FOOD MARKETING COST INDEX, 1978-1983

	1978	1979	1980	1981	1982	1983
			(1981=100)			
Total FMCI	73.95	81.29	89.84	100.00	109.74	116.60
		9.93[a]	10.52	11.32	9.73	6.25
Labor	73.89	81.44	89.84	100.00	109.05	117.27
		10.21	10.32	11.30	9.05	7.54
Containers & packaging	70.74	79.76	91.52	100.00	107.58	111.49
		12.76	14.74	9.27	7.58	3.63
Transportation	72.07	77.81	87.12	100.00	114.11	120.37
		7.97	11.96	14.79	14.11	5.49
Travel & promotion	73.96	81.05	88.33	100.00	118.48	123.37
		9.58	8.98	13.22	18.47	4.13
Fuel & power	60.44	69.41	81.03	100.00	116.44	125.62
		14.84	16.77	23.39	16.44	7.88
Rent & storage	75.92	82.40	89.74	100.00	105.12	108.03
		8.54	8.90	11.43	5.12	2.77
Maintenance & repair	74.02	82.62	90.06	100.00	107.73	113.22
		11.61	9.01	11.03	7.73	5.09
Taxes & insurance	86.47	90.84	94.25	100.00	112.97	122.45
		5.05	3.75	6.10	12.97	8.39
Business & other services	91.71	94.07	99.45	100.00	100.37	103.18
		2.56	5.72	0.56	0.37	2.80
Utilities	86.85	89.49	91.85	100.00	111.56	118.90
		3.03	2.64	8.88	11.55	6.59
Office and other supplies	71.04	80.00	89.69	100.00	109.09	113.96
		12.60	12.22	11.49	9.09	4.46

[a]percent change from a year ago.

TABLE 12. FOOD MARKETING COST INDEXES FOR CANADA AND THE U.S.

	Canada	U.S.
	(percent change from year ago)	
1978	N/A	8.5
1979	9.9	11.1
1980	10.5	13.5
1981	11.3	10.9
1982	9.7	5.2
1983	6.3	2.5
1978-83	57.7	50.8

Source: For U.S., as per Table 30, Appendix C.

Although the overall trend is similar in both countries, that is, rising to a peak in 1980-81 and decreasing to a low in 1983, the magnitudes of the yearly changes are different. The two most obvious explanations for these differences are labor costs, and the direct and indirect impact of energy through packaging and transportation costs.

As labor costs are the largest input cost in both FMCI's, changes in labor costs are a dominant factor in the overall performance of the two indexes. In Canada, annual increases in the labor cost index peaked at 11.3% in 1981 before decreasing to 7.5% in 1983. In the U.S., the equivalent labor series peaked at 10.1% in 1980 (9.8% in 1981) before decreasing to 3.5% in 1983. Thus, the lower rate of change in labor costs in recent years is a major factor in explaining the smaller changes in the U.S. FMCI.

In the period 1978 to 1983, the cost of fuel and power doubled in both countries. However, the time-frame for these increases was different. In the U.S., energy prices increased at an annual rate of over 20% in both 1979 and 1980 and decreased 0.3 percent in 1983. In Canada, prior to the Energy Agreement of 1981, energy price adjustments toward world price levels were slower than in the U.S. The U.S. moved toward world prices in the late 1970s. In Canada, energy cost increases were not over 20% till 1981. The impact of energy cost increases is not limited to fuel and power but also affects the index through the transportation cost index, and through prices of containers and packaging (petro-chemical products).

Uses and Limitations

The FMCI will serve as an important tool in Agriculture Canada's food price monitoring program as reported in the Food Market Commentary. It will also assist in research on causes of food price movements and provide a basis for an outlook on the impacts of changing resource costs on food prices.

The Index, however, will be interpreted with caution in recognition of its limitations. In the short term, all input costs may not be reflected at the retail level because of pricing decisions by processors, wholesalers and retailers. In the long term, the FMCI may overstate increases in marketing costs because the index is not adjusted for gains in labor productivity and substitution between inputs.

The latter limitation will be partly offset by occasional updating of the weights. The FMCI will also be complemented in the future by the Food Marketing Bill data on the distribution of the consumer's food dollar between marketing services and the farm value.

APPENDIX A

TABLE 13. INPUT CLASSIFICATION IN CENSUS OF MANUFACTURERS

Container and packaging Supplies

Folding & set-up boxes, paper board
Corrugated boxes & cartons
Wooden boxes, crates, barrels, kegs
Cans, metal
Barrels & drums, metal (one-trip shippers)
Cans, drums, paper or fibre
Glass bottles, jars, carboys
Plastic bottles, carboys
Paper bags, all kings
Textile bags
Bags, transparent film
Paper, all kinds
Transparent film, sheets or rolls
Metal or plastic closures
Labels, tags, and wrappers
Cores, cones, tubes and spools
Plastic containers
Metal staples, strapping and ware
Crating lumber, wooden pallets and skids
Lead, tin, aluminum foil:
  Bags
  Rolls
  Containers
  Miscellaneous
  Not specified

Labor

Wages

Energy

Gasoline
Fuel oil:
  Kerosine, stove oil
  Diesel oil
  Light fuel oil
  Heavy fuel oil

Electricity

Others

Coal & coke
Natural gas
Steam and others

Liquefied petroleum gases (propane, butane)

Source: Statistics Canada, Census of Manufacturers, Catalog 32-202 32-230 inclusive.

TABLE 14. EXPENSE CATEGORIES IN CORPORATION FINANCIAL STATISTICS

Materials
Salaries and Wages
Repairs and Maintenance
Rent (real estate)
Rent (other)
Royalties
Bond Interest
Mortgage Interest
Other Interest
Taxes other than direct taxes
Depreciation
Depletion and amortization
Other expenses

Source: Statistics Canada, Corporation Financial Statistics, Catalog 61-207.

TABLE 15. INPUTS OF THE FOOD PROCESSING INDUSTRY IN 1979

	Commodity code and title	Input cost at purchase price	Share of operating costs
		(million $)	
*001	Cattle and calves	2 336.500	
*002	Sheep and lambs	8.430	
*003	Hogs	1 259.740	
*004	Poultry	638.124	
*005	Other live animals	28.804	
*007	Wheat, unmilled	466.528	
*008	Barley, oats, rye, corn, grain	183.663	
*009	Milk, whole, fluid, unprocessed	1 978.850	
*010	Eggs in the shell	13.168	
*011	Honey and beeswax	17.275	
*012	Nuts, edible, not shelled	9.234	
*013	Fruits, fresh, ex tropical	83.527	
*014	Vegetables, fresh	261.622	
*018	Oilseeds, nuts and kernels	539.598	
*029	Fish landings	757.309	
039	Natural gas	79.054	0.0116
*044	Salt	13.797	
*052	Beef, veal, mutton & pork, fresh and frozen	1 271.919	
*055	Meat prep. cooked not canned	3.140	
*057	Animal oils & fats & lard	123.750	
*058	Margarine, shortening & like products	67.613	
*059	Sausage casings, natural & synthetic	48.531	
*060	Primary tankage	39.301	
*062	Hides and Skin, Raw	24.796	
*063	Animal material for drugs & perfume	6.448	
*064	Custom work meat & food	21.116	
*065	Poultry, fresh, chilled, frozen	76.770	
*067	Milk, whole, fluid, processed	69.964	
*068	Cream fresh	45.496	
*069	Butter	78.808	
*070	Cheese, cheddar and processed	220.018	
*071	Milk evaporated	4.560	
*073	Other dairy products	110.228	
*075	Fish products	93.744	
*076	Fruit, berries, dried	158.099	
*077	Fruits & preparations canned	12.735	
*078	Vegetables, frozen, dried & preserved	52.394	

(continued)

TABLE 15. (Continued)

	Commodity code and title	Input cost at purchase price	Share of operating costs
		(thousands $)	
*079	Vegetables & preparations canned	4.544	
*082	Pickles, relishes, other sauces	1.738	
*083	Vinegar	2.966	
*085	Primary or concentrated feeds	1.222	
*086	Feed for commercial livestocks	3.706	
*087	Feeds, grain origin	4.745	
*090	Wheat flour	310.775	
*091	Meal & flour of other cereals & vegetables	9.736	
*095	Other bakery products	11.434	
*096	Cocoa & chocolate	110.374	
*097	Nuts, kernels & seeds prepared	59.043	
*099	Other confectionery	2.462	
*101	Sugar	316.859	
*102	Molasses, sugar refinery products	15.741	
*104	Vegetable oils & fats, crude	228.012	
*106	Malt, malt flour & wheat starch	70.829	
*107	Maple sugar & syrup	29.842	
*108	Prepared cake & similar mixes	12.335	
*111	Tea	53.419	
*113	Miscellaneous food	254.331	
*114	Soft drink concentrates & syrups	113.189	
117	Alcohol, natural, ethyl	3.724	0.0005
135	Plastic pipe fittings & sheet	73.493	0.0108
136	Plastic containers & bottle caps	65.859	0.0097
175	Textile containers	9.846	0.0014
199	Containers, closures & wood pallets	6.687	0.0010
214	Wrapping paper	34.104	0.0050
221	Paper cartons, bags, cans & bottles	499.662	0.0735
222	Converted paper, gum, wax or print	27.292	0.0040
223	Converted aluminum foil	25.121	0.0037
231	Other printed matter	71.490	0.0105
264	Aluminum & aluminum alloys, cast	1.938	0.0003
286	Containers & bottle caps of metal	477.160	0.0702
325	Metal, end products	12.931	0.0019
391	Glass containers	120.422	0.0177
395	Motor gasoline	44.726	0.0066
396	Fuel oil	74.298	0.0109
397	Lubricating oils & greases	15.949	0.0023
399	Butane, propane & other liquid petroleum gas	5.561	0.0008
408	Phamaceuticals	8.349	0.0012

(continued)

TABLE 15. (Continued)

	Commodity code and title	Input cost at purchase price	Share of operating costs
		(million $)	
*410	Vegetable oils, other than corn oil, refined	156.370	
414	Industrial chemical preperations	6.938	0.0010
421	Carbon dioxide (gas & dry ice)	4.688	0.0007
422	Inorganic acids and oxygen	3.126	0.0005
424	Caustic soda (sodium hydroxide) dry	2.472	0.0004
432	Metallic salts & peroxysalts	3.547	0.0005
433	Photographic & inorganic chemicals	7.189	0.0011
444	Hydrocarbons & their derivatives	2.635	0.0004
449	Alcohols, acid treated	2.600	0.0004
458	Citric acids	7.740	0.0011
459	Stearic & organic acids	3.314	0.0005
461	Sodium glutamate, mono	5.026	0.0007
464	Organic chemicals	2.803	0.0004
479	Crude vegetable materials & extracts	8.814	0.0013
492	Essential oils, natural or synthetic	7.296	0.0011
*517	Animal hair, feathers, quills, etc.	1.528	
522	Repair construction	43.500	0.0064
530	Air transportation	2.209	0.0003
534	Services incidental to water transportation	5.126	0.0008
535	Railway transportation	1.661	0.0002
536	Truck transportation	18.417	0.0027
542	Storage (payment for storage services)	19.029	0.0028
544	Telephone & telegraph	54.557	0.0080
545	Postal services	8.135	0.0012
546	Electric power	99.502	0.0146
549	Water and other utilities	8.239	0.0012
552	Rental of office equipment	3.161	0.0005
554	Imputed service, banks	24.629	0.0036
555	Other real estate (non-rent) & financial services	71.986	0.0106
556	Insurance & WCB	21.340	0.0031
559	Other rent	80.731	0.0119
566	Services to business management	44.425	0.0065
568	Laundry, cleaning & pressing services	9.884	0.0015
575	Rental data processing equipment	22.427	0.0033
576	Other services to businesses & persons	29.380	0.0043
577	Rental of autos & trucks	23.161	0.0034
578	Trade association dues	5.778	0.0009
579	Rental AO machinery & equipment including construction machinery	29.192	0.0043
580	Spare parts & maintenance supply machinery & equipment	182.018	0.0268
581	Office supplies	30.775	0.0045

(continued)

TABLE 15. (Concluded)

	Commodity code and title	Input cost at purchase price	Share of operating costs
		(thousands $)	
582	Cafeteria supplies	3.785	0.0006
584	Labor equipment & supplies	47.013	0.0069
585	Travelling and entertainment	200.428	0.0295
586	Advertising & promotion	329.900	0.0486
587	Purchased repair services for machinery	136.306	0.0201
*590	Sugar, raw	283.083	
*591	Cocoa, beans, unroasted	52.953	
*592	Green coffee	371.160	
595	Government goods & services	10.775	0.0016
*597	Subsidies	128.690	
598	Other indirect taxes	107.819	0.0159
599	Wages and salaries (adjusted)	3 136.754	0.0467
600	Supplementary labor income (adjusted)	256.004	0.0377
**601	Net income unincorporated business		
*602	Operating surplus	1 871.970	
	Total operating inputs costs*	6 793.897	1.0000

* Items excluded: (a) Raw materials - 1 to 29, 44 to 114, 410, 517, 590 to 592;
(b) Margins - 540, 547, 550, 553, 583, 596;
(c) Subsidies and profits - 597, 602.

**Split and included with items # 599 and 600.

Source: Input-Output Tables on the Canadian Economy

TABLE 16. OUTPUTS OF THE WHOLESALE AND RETAIL TRADE, 1979 (HIGHEST AGGREGATION LEVEL)

	Commodity code and title	Wholesale Trade	Retail Trade
		- $ millions -	
002	Other agricultural products	0.0	7.3
003	Forestry products	6.1	0.0
006	Mineral feeds	5.5	0.0
007	Non-metallic minerals	7.6	0.0
009	Meat, fish & dairy products	2.4	420.7
010	Fruit, Vegetables feed, miscellaneous food products	77.0	19.6
011	Beverages	1.7	0.0
013	Rubber, leather, plastic fabricated products	9.0	0.0
014	Textile products	3.9	4.5
015	Knitted products & clothing	9.7	0.7
016	Lumber, saw mill, other wood products	59.0	0.0
017	Furniture & fixtures	2.3	0.0
018	Paper & paper products	26.0	0.0
019	Printing & publishing	3.1	0.0
020	Primary metal products	10.0	0.0
021	Metal fabricated products	27.5	0.0
022	Machinery & equipment	82.4	0.0
023	Autos, trucks & other transportation equipment	25.4	0.0
024	Electrical & communicative products	67.8	0.0
025	Non-metallic mineral products	7.1	0.0
026	Petroleum & wood products	9.6	0.0
027	Chemicals, chemical products	62.6	0.0
028	Miscellaneous Manufactured products	40.9	0.0
032	Transportation & storage	0.0	15.6
035	Wholesale margins	14,736.8	
036	Retail margins		17,715.8
038	Other finance in: real estate	63.8	116.2
039	Business services	40.2	1.9
040	Personal & other miscellaneous services	1,420.8	3,808.7
TOTAL		16,808.2	22,111.1

Source: Statistics Canada, Input-Output Structure of the Canadian Economy, Catalog 15-201E, Annual, page 295.

TABLE 17. INPUTS OF THE WHOLESALE TRADE IN 1979

	Commodity code and title	Input cost at purchase price	Share of operating costs
		(million $)	
*007	Wheat, unmilled	1.363	
*008	Barley, oats, rye, corn, grain	22.798	
*024	Logs and bolts	16.150	
*038	Crude mineral oils	5.850	
039	Natural gas	37.042	0.0028
*076	Fruit, berries, dried, crystal	3.444	
*085	Primary or concentrated feeds	1.258	
*097	Nuts, kernels & seeds prepared	10.989	
*101	Sugar	5.461	
*103	Oilseed, meal & cake	1.990	
*113	Miscellaneous food	1.201	
127	Tires & tubes	2.866	0.0002
*130	Rubber belts & coated fabrics	1.084	
135	Plastic pipe fittings & sheet	36.905	0.0028
136	Plastic containers & bottle caps	18.741	0.0014
*158	Fabrics, woven, textile fibres	1.515	
166	Other cordage, twine & rope	3.347	0.0003
175	Textile containers	8.229	0.0006
*191	Lumber and timber	13.577	
*195	Veneer and plywood	6.498	
*196	Millwood (woodwork)	3.672	
199	Containers, closures & wood pallets	46.919	0.0035
211	Other paper for printing	1.328	0.0001
212	Fine paper	4.633	0.0003
213	Tissue & sanitary paper	11.743	0.0009
214	Wrapping paper	5.917	0.0004
*215	Paper board	1.984	
*216	Building paper	1.656	
*219	Miscellaneous industrial paper materials	5.789	
*221	Paper cartons, bags, cans & bottles	77.718	
*222	Converted paper, gum, wax or print	31.894	
225	Paper containers	16.875	0.0013
231	Other printed matter	30.479	0.0023
*236	Iron, steel ingots	2.032	
*238	Steel castings	1.181	
*239	Steel bars and rods	3.062	
*240	Steel plates, not fabricated	6.083	
*241	Carbon steel sheets not coated	5.682	
*252	Cast & wrought iron pipe & fittings	1.715	
*264	Aluminum & aluminum alloys, cast	3.344	

(continued)

TABLE 17. (Continued)

	Commodity code and title	Input cost at purchase price	Share of operating costs
		(million $)	
*276	Beams & other structural steel	2.087	
*280	Steel sheet & strip, coated or fabricated	8.390	
*286	Containers & bottle caps of metal	70.540	
287	Wire & wire rope, of steel	6.566	0.0005
*292	Bolts, nuts, screws, washers, etc.	9.168	
*299	Domestic equipment	3.114	
*305	Custom metal working	13.155	
*315	Other agricultural machinery	12.712	
*316	Mechanical power transportation equipment	2.440	
*318	Conveyors, & hoist machinery	4.645	
*323	Machinery specified & special purpose	6.574	
329	Office machines & equipment	2.086	0.0002
341	Motor vehicle engines & parts	3.652	0.0003
343	Motor vehicle accessory parts	3.527	0.0003
*357	T.V., radio, record players	1.153	
*361	Electrical tubes & semi-conductors, etc.	1.151	
*362	Electronic equipment components	6.785	
*366	Engines, marine, electrical turbines	4.127	
*367	Transformers & converters	1.141	
*368	Electrical, equipment, industrial	7.042	
*382	Plumbing equipment	3.736	
*390	Glass, plate, sheet, wool	6.075	
395	Motor gasoline	429.599	0.0324
396	Fuel oil	119.524	0.0090
397	Lubricating oils & greases	20.328	0.0015
399	Butane, propane	13.436	0.0010
405	Film & sheet cellulosic plastic	22.163	0.0017
*409	Paints & related products	1.155	
*414	Industrial chemical preperations,	4.046	
*424	Caustic soda (sod. hydroxide) dry	1.011	
*434	Ethylene	4.944	
*463	Organo-inorganic compounds, etc.	2.772	
*470	Synthetic rubber	1.505	
*479	Crude vegetable materials & extracts	1.254	
*482	Adhesives	3.606	
*493	Tanning materials & dyestuffs	8.090	
*499	Measuring control instruments	1.360	
*500	Medical and related instruments	1.360	
*502	Watches, clocks, chronometers, etc.	1.466	
*503	Photographic equipment	1.175	

(continued)

TABLE 17. (Continued)

	Commodity code and title	Input cost at purchase price	Share of operating costs
		(million $)	
*518	Misc. fabricate materials including bristles,	4.213	
*521	Household ornamental objects & art	3.050	
522	Repair construction	34.000	0.0026
530	Air transportation	6.194	0.0005
532	Services incidental to transportation	46.989	0.0035
533	Water transportation	39.059	0.0029
534	Services incidental to water transportation	8.182	0.0006
535	Railway transportation	53.789	0.0041
536	Truck transportation	79.870	0.0060
542	Storage	158.245	0.0119
544	Telephone & telegraph	353.026	0.0266
545	Postal services	100.473	0.0076
546	Electric power	157.815	0.0119
549	Water and other utilities	1.059	0.0001
*550	Wholesaling margins	170.000	
552	Rental of office equipment	27.920	0.0021
554	Imputed service, banks	110.802	0.0084
555	Other real estate (non-rent)	223.212	0.0168
556	Insurance & WCB	42.942	0.0032
559	Other rent	525.712	0.0396
*560	Govt. royalties on natural resources	3.293	
566	Services to business management	200.825	0.0151
568	Laundry, cleaning & pressing services	6.466	0.0005
575	Rental data processing equipement	78.188	0.0059
576	Other services to businesses & persons	178.630	0.0135
577	Rental of autos & trucks	61.869	0.0047
578	Trade association dues	7.546	0.0006
579	Rental AO machinery & equipment	63.876	0.0048
580	Spare parts	154.552	0.0117
581	Office supplies	170.924	0.0129
*584	Laboratory equip. & supplies	3.214	
585	Travelling and entertainment	544.318	0.0411
586	Advertising & promotion	336.457	0.0254
587	Purchases repair services	42.769	0.0032
595	Government goods & services	4.128	0.0003
*597	Subsidies	-38.250	
598	Other indirect taxes	223.887	0.0169

(continued)

TABLE 17. (Concluded)

	Commodity code and title	Input cost at purchase price	Share of operating costs
		(million $)	
599	Wages and salaries (adjusted)	7 835.476	0.5909
600	Supplementary labor income (adjusted)	534.736	0.0403
**601	Net income unincorporated business (labor)	503.193	
*602	Other operating surplus	2 997.522	
	Operating costs only	17 008.303	1.0000

*Items excluded
**Split and included in items 599 and 600

Source: As for Table 15.

TABLE 18. RETAIL PRICE

	Commodity code and title	Input cost at purchase price	Share of operating costs
		(million $)	
*001	Cattle and calves	403.162	
*002	Sheep and lambs	9.022	
*003	Hogs	12.844	
*004	Poultry	16.324	
*005	Other live animals	4.432	
039	Natural gas	182.731	0.0099
*059	Sausage casings, natural & synthetic	2.943	
*064	Custom work meat & food	2.206	
127	Tires & tubes	1.683	0.0001
*128	Tires, retreading	9.628	
*130	Rubber belts & coated fabrics	6.181	
*131	Rubber sheeting shoe stock, etc.	6.408	
*132	Hose & tubing, mainly rubber	3.982	
136	Plastic containers & bottle caps	24.926	0.0013
*160	Rags & waste, cotton & textile mat.	1.483	
189	Custom tailoring	22.581	0.0012
199	Containers, closures & wood pallets	1.295	0.0001
*203	Wood end products	9.834	
213	Tissue & sanitary paper	14.278	0.0008
214	Wrapping paper	7.093	0.0004
*219	Misc. industrial paper materials	2.520	
221	Paper cartons, bags, cans & bottles	275.285	0.0149
*222	Converted paper, gum, wax or print	49.074	
225	Paper containers	18.750	0.0010
*227	Paper end products	4.742	
231	Other printed matter	29.873	0.0016
285	Kitchen utensils	1.226	0.0001
*286	Containers & bottle caps of metal	14.757	
*305	Custom metal working	21.547	
*388	Asbestos products	5.545	
395	Motor gasoline	321.374	0.0174
396	Fuel oil	108.714	0.0059
397	Lubricating oils & greases	12.412	0.0007
405	Film & sheet cellulosic plastic	28.817	0.0016
*502	Watches, clocks, chronometers, etc.	1.629	
*518	Miscellaneous fabricated materials	3.043	
*521	Household ornamental objects & art	12.214	
522	Repair construction	105.800	0.0057
530	Air transportation	13.204	0.0007
532	Services incidental to transportation	55.424	0.0030

(continued)

TABLE 18. (Concluded)

	Commodity code and title	Input cost at purchase price	Share of operating costs
		(million $)	
535	Railway transportation	21.507	0.0012
536	Truck transportation	48.038	0.0026
542	Storage	63.953	0.0035
544	Telephone & telegraph	253.002	0.0137
545	Postal services	272.671	0.0148
546	Electric power	509.861	0.0276
549	Water and other utilities	7.983	0.0004
552	Rental of office equipment	26.405	0.0014
554	Imputed service, banks	62.193	0.0034
555	Other real estate	96.231	0.0052
556	Insurance & WCB	123.910	0.0067
559	Other rent	1 460.349	0.0791
566	Services to business management	144.543	0.0078
568	Laundry, cleaning & pressing services	14.741	0.0008
575	Rental data processing equipment	83.167	0.0045
576	Other services to businesses & persons	66.997	0.0036
577	Rental of autos & trucks	37.380	0.0020
578	Trade association dues	16.013	0.0009
579	Rental AO machinery & equipment	47.111	0.0026
580	Spare parts	122.416	0.0066
581	Office supplies	148.692	0.0081
582	Cafeteria supplies	164.807	0.0089
585	Travelling and entertainment	172.210	0.0093
586	Advertising & promotion	674.464	0.0365
587	Purchased repair services	46.109	0.0025
*592	Green coffee	9.565	
595	Government goods & services	7.250	0.0004
*597	Subsidies	-46.108	
598	Other indirect taxes	460.775	0.0249
599	Wages and salaries	11 379.905	0.6162
600	Supplementary labor income	710.730	0.0385
**601	Net income unincorporated business	1 599.916	
*602	Other operating surplus	29 621.124	
	Operating costs only		1.0000

*Items excluded)
**Split and included in item #599 and 600

Source: As for Table 15.

TABLE 19. MARGINS ON FOOD PURCHASED BY CONSUMERS

Commodity Title		Wholesale Margins	Retail Margins	Transport Margins
			(thousand $)	
004	Poultry	162	0	160
010	Eggs in the Shell	15,382	19,045	2,725
011	Honey & Beeswax	5,156	5,858	579
012	Nuts, Edible, Not Shelled	468	1,569	555
013	Fruits, Fresh, excluding tropical	64,181	107,233	15,292
014	Vegetables, fresh	66,608	171,309	20,888
018	Oilseeds, nuts & kernels	56	43	169
029	Fish Landings	2,698	9,181	1,538
044	Salt	1,072	11,990	9,175
052	Beef, Veal, Mutt & Pork, fresh & Frozen	52,186	612,420	43,148
053	Horse Meat Fresh, Chilled, Frozen	218	1,954	142
054	Meat, cured	14,188	99,125	7,506
055	Meat preparations cooked, not canned	16,921	115,435	10,151
056	Meat preparations canned	6705	30,249	4,432
057	Animal oils & fats & lard	1,370	11,323	911
058	Margarine, shortening & like products	26,044	49,557	6,086
065	Poultry, fresh, chilled, frozen	25,791	153,593	12,333
066	Poultry canned	520	977	147
067	Milk, whole, fluid, processed	0	155,933	13,104
068	Cream, fresh	0	18,971	1,505
069	Butter	19,320	55,666	5,086
070	Cheese, Cheddar & processed	67,695	157,508	14,204
071	Milk evaporated	8,552	18,310	1,266
072	Ice Cream	11,551	49,649	5,886
073	Other dairy products	18,959	43,884	6,105
074	Mustard, Mayonnaise	11,945	18,974	3,468
075	Fish Products	43,816	85,725	16,804
076	Fruit, berries, dried, crystalized	19,828	73,383	8,864
077	Fruits & preparations canned	22,558	56,857	7,492
078	Vegetables frozen, fried & preserved	14,628	49,026	12,197
079	Vegetables & preparations, canned	27,265	84,592	14,911
080	Soups, canned	17,941	38,528	5,788
081	Infant & junior foods, canned	6,501	18,536	1,908
082	Pickles, relishes, other sauces	17,499	42,727	8,661
083	Vinegar	1,498	4,619	436
084	Other food preparations	28,697	74,444	14,335
090	Wheat flour	11,231	23,850	3,540
091	Meal & flour of other cereals & vegetables	4,071	6,841	2,226
092	Breakfast cereal prdoucts	18,921	51,522	9,948
093	Biscuits	17,351	78,990	6,564
094	Bread & rolls	0	219,119	14,377
095	Other bakery products	15,921	138,860	10,817
096	Cocoa & chocolate	3,165	13,434	1,554
097	Nuts, kernels & seeds prepared	6,514	29,609	2,908
098	Chocolate confectionery	48,418	134,409	14,309
099	Other confectionery	32,698	81,329	12,656
101	Sugar	19,356	46,133	2,587
102	Molasses, sugar refinery products	86	1,875	293
106	Malt, Malt flour & wheat starch	8,482	2,884	4,407
107	Maple syrup & sugar	3,436	5,162	1,819
108	Prepared cake & similar mixes	7,289	14,289	3,743
109	Soups, dried & soup mixes & bases	5,241	14,448	2,703
110	Coffee, roasted, ground, prepared	47,253	104,675	8,411
111	Tea	9,390	27,057	8,544
112	Potato chips & similar products	18,763	42,090	15,530
113	Miscellaneous food	38,163	107,860	89
114	Soft drink concentrates & syrups	544	858	14,500
115	Carbonated bev. soft drinks	40,568	150,958	49
218	Vanillin	10	121	1,519
410	Vegetables Oils, other than corn oil	2,721	6,272	1,519
516	Ice	0	160	27
593	Tropical fruit	24,112	64,456	9,896
	Total	1,019,401	3,794,454	434,901

Source: As for Table 15.

TABLE 20. OUTPUTS OF THE FOOD PROCESSING INDUSTRIES IN 1979

Commodity code and title		Million $	
011	Honey and beeswax	26	
052	Beef, veal, mutton & pork, fresh & frozen	4,344	
053	Horse Meat fresh, (chilled) frozen	36	
054	Meat, cured	542	
055	Meat preparations cooked, not canned	744	
056	Meat preparations canned	121	
057	Animal oils & fats & lard	266	
058	Margarine, shortening and like products	198	
*059	Sausage casings, material & synthetic	25	
*060	Primary tankage	45	
*061	Feeds of animal origin	80	
*062	Hides & skins, raw	165	
*063	Animal material for drugs & perfume	18	
064	Custom work meat & food	34	
065	Poultry, fresh, chilled, frozen	887	
066	Poultry, canned	12	
067	Milk, whole, fluid, processed	1,327	
068	Cream, fresh	145	
069	Butter	373	
070	Cheese, Cheddar & processed	836	
071	Milk evaporated	168	
072	Ice Cream	238	
073	Other dairy products	385	
074	Mustard mayonnaise	41	
075	Fish products	1,405	
076	Fruit, berries, dried, crystalized	256	
077	Fruits & preparations canned	145	
078	Vegetable frozen, dried & preserved	234	
079	Vegetables & preparations canned	288	
080	Soups canned	149	
081	Infant & junior foods, canned	16	
082	Pickles, relishes, other sauces	201	
083	Vinegar	15	
084	Other food preparations	225	
*086	Feed for commercial livestock	3	
*087	Feeds, grain origin	81	
*089	Pet feeds	9	
090	Wheat flour	485	
091	Meal & flour of other cereals	36	
092	Breakfast Cereal products	201	
093	Biscuits	304	
094	Bread & rolls	753	
095	Other bakery products	475	
096	Cocoa & chocolate	62	
097	Nuts, kernels & seeds prepared	84	
098	Chocolate confectionery	298	
099	Other confectionery	262	
101	Sugar	474	
102	Molasses, sugar refinery products	5	
*103	Oilseed, meal & cake	250	
*104	Vegetable Oils & fats, crude	231	
*105	Nitrogen function compounds	2	
106	Malt, malt flour & wheat starch	210	
107	Maple sugar & syrup	48	
108	Prepared cake & similar mixes	99	
109	Soups, dried, & soup Mixes & bases	50	
110	Coffee, roasted, ground, prepared	528	
111	Tea	121	
112	Potato chips & similar products	209	
113	Miscellaneous food	703	
114	Soft drink concentrates & syrups	121	
115	Carbonated bev., soft drinks	778	
*323	Machinery specified & special purpose	6	
*408	Pharmaceuticals	13	
410	Vegetable oils, other than corn oil	126	
*494	Fats & chemical mixtures	1	
*517	Animal hair, feathers, quills, etc.	1	
*550	Wholesaling Margins	650	
*559	Other rent	4	
570	Meals	7	
	Total output	21,680	
	Non Food Output	1,584	= 7.31% of total output
	Food Output	20,096	= 92.69% of total output

*Non Food

Source: As for Table 15.

TABLE 21. FOOD EXPORTS IN 1979

Commodity code and title		Million $
*001	Cattle & calves	199.161
*002	Sheep & lambs	0.777
*003	Hogs	18.925
*004	Poultry	11.107
*010	Eggs in the shell	9.602
011	Honey & beeswax	10.736
*012	Nuts, edible, not shelled	0.084
*013	Fruits, fresh, excluding tropical	37.741
*014	Vegetables, fresh	41.575
*018	Oil seeds, nuts & kernels	769.015
*029	Fish landings	101.466
044	Salt	15.177
052	Beef, veal, mutt & pork, fresh & frozen	356.819
053	Horse meat fresh, chilled, frozen	32.621
054	Meat, cured	10.170
055	Meat preparations cooked, not canned	11.359
056	Meat, preparations canned	1.248
057	Animal oils & fats & lard	85.813
058	Margarine, shortening & like products	1.183
065	Poultry, fresh, chilled, frozen	2.126
068	Cream fresh	0.437
069	Butter	0.049
070	Cheese, cheddar & processed	9.088
071	Milk evaporated	53.120
072	Ice cream	0.809
073	Other dairy products	54.524
074	Mustard, mayonnaise	0.437
075	Fish products	1,138.603
076	Fruit, berries, dried, crystalized	18.602
077	Fruits & preparations canned	6.485
078	Vegetable frozen, dried & preserved	75.718
079	Vegetables & preparations canned	18.958
080	Soups canned	0.534
081	Infant & junior foods, canned	9.841
082	Pickles, relishes, other sauces	1.800
083	Vinegar	0.166
084	Other food preparations	3.965
090	Wheat flour	127.814
091	Meal & flour of other cereals & veg.	10.499
092	Breakfast cereal products	4.150
093	Biscuits	35.545
095	Other bakery products	10.205
096	Cocoa & chocolate	5.126
097	Nuts, kernels & seeds prepared	1.791
098	Chocolate confectionery	15.180
099	Other confectionery	13.469
101	Sugar	50.792
102	Molasses, sugar refinery products	0.400
106	Malt, malt flour & wheat starch	53.292
107	Maple sugar & syrup	16.197
108	Prepared cake & similar mixes	0.952
109	Soups, dried & soup mixes & bases	0.531
110	Coffee, roasted, ground, prepared	3.256
111	Tea	0.292
112	Potato chips & similar products	0.193
113	Miscellaneous food	45.500
114	Soft drink concentrates & syrups	0.712
115	Carbonated beverages, soft drinks	2.291
218	Vanillin	24.868
410	Vegetable oils, other than corn oil	52.087
	TOTAL EXPORTS OF PROCESSED FOODS	2,355.493

*Items excluded because they are not outputs of food processing industries

Source: As for Table 15.

TABLE 22. FOOD INPUTS INTO THE FOOD AND ACCOMMODATION INDUSTRY, 1979

Commodity code	and title	Million $	Import Coefficient for food	Import Value
010	Egg in shell	46	0.074941	3.447
*011	Honey and beeswax	2	0.007652	0.015
013	Fruits, fresh, excluding tropical	26	0.558868	14.531
*014	Vegetables, fresh	95	0.316279	30.047
*029	Fish landings	19	0.036528	0.694
*044	Salt	2	0.149675	0.299
*052	Beef, veal, mutton or pork, fresh or frozen	706	0.062921	44.422
054	Meat, cured	111	0.014123	1.568
055	Meat preperations cooked not canned	149	0.009386	1.399
056	Meat preperations canned	27	0.148817	4.018
057	Animal oils & fats & lard	3	0.058508	0.176
058	Margarine, shortening & like products	38	0.008370	0.318
064	Custom Work meat & food	7	0.0	0.0
065	Poultry, fresh, chilled, frozen	147	0.024725	3.635
066	Poultry, canned	3	0.051905	0.156
067	Milk, whole, fluid, processed	118	0.000004	0.001
068	Cream, fresh	17	0.004327	0.074
069	Butter	77	0.000032	0.003
070	Cheese, Cheddar & processed	27	0.079239	2.140
071	Milk evaporated	17	0.000342	0.006
072	Ice Cream	26	0.000027	0.001
073	Other dairy products	23	0.032959	0.758
074	Mustard mayonnaise	11	0.023878	0.263
075	Fish products	104	0.533690	55.504
076	Fruit, berries, dried, crystalized	12	0.545350	6.544
077	Fruits & preparations, canned	15	0.359174	5.388
078	Vegetables frozen, dried & preserved	8	0.206583	1.653
079	Vegetables & preparations, canned	48	0.267378	12.834
080	Soups, canned	13	0.009071	0.118
082	Pickles, relishes, other sauces	21	0.066363	1.394
083	Vinegar	2	0.065811	0.132
084	Other food preparations	13	0.149414	1.942
090	Wheat flour	23	0.001321	0.030
091	Meal & flour of other cereals	3	0.510248	1.531
092	Breakfast cereal products	18	0.031184	0.561
093	Biscuits	21	0.074586	1.566
094	Bread & rolls	92	0.005302	0.488
095	Other bakery products	40	0.048036	1.921
096	Cocoa & chocolate	8	0.529703	4.238
097	Nuts, kernels & seeds, prepared	6	0.444379	2.666
101	Sugar	43	0.001413	0.061
102	Molasses, sugar refinery products	4	0.740181	2.961
108	Prepared cake & similar mixes	7	0.373190	0.261
109	Soups, dried & soup mixes & bases	5	0.162009	0.810
110	Coffee, roasted, ground, prepared	52	0.182430	9.486
111	Tea	22	0.325104	7.152
113	Miscellaneous food	26	0.161825	4.208
114	Soft drink concentrates & syrups	7	0.036029	0.252
115	Carbonated beverages	49	0.001915	0.094
570	Meals	10	0.0	0.0
593	Tropical fruit	28	1.000000	28.000
*				
Total processed food (total minus *ed items)		2181		182.735

*Food inputs not produced by processing industry

Source: As for Table 15.

TABLE 25. WHOLESALE MARGINS ON INTERMEDIATE FOOD INPUTS OF:

Commodity code and title		Processing	Wholesale trade	Retail trade	Sum total
			(thousand $)		
001	Cattle and calves	31 387	6	5 095	36 488
002	Sheep and lambs	254		269	523
003	Hogs	29 480		192	29 672
004	Poultry	20 294		519	20 813
009	Milk, whole, fluid, unprocessed	13 707			13 707
010	Eggs in the shell	683			683
011	Honey and beeswax	810			810
012	Nuts edible not shelled	605			605
013	Fruit fresh, excluding tropical	12 877	116		12 993
014	Vegetables fresh	23 546			23 546
018	Oilseed nuts and kernels	5 739	9		5 748
029	Fish landings	21 236			21 236
044	Salt	116			116
052	Meat, excluding poultry	451	3		454
054	Meat, cured	22			22
055	Meat, preperations cooked, not canned	55			55
056	Meat, preperations, canned				
057	Animal oils and fats and lard	2 428			2 428
058	Margarine, shortening	5 704			5 704
065	Poultry, fresh, chilled, frozen	762			762
067	Milk, whole, fluid, processed				
068	Cream, fresh				
069	Butter	474	4		478
070	Cheese, incluing process cheese	3 272	47		3 319
071	Milk evaporated				
072	Ice Cream				
073	Other dairy products	3 778	27		3 805
074	Mustard salad dressing spread	4			4
075	Processed fish & fish products	168	5		173
076	Fruits, berries, processed, not canned	8 423	186		8 609
077	Fruits & preparations, canned	902	46		948
078	Vegetables, processed, not canned	643			643
079	Vegetables preparations, canned	370			370
082	Pickles, relished, other sauces	139			139
083	Vinegar	339			339
091	Meal flour, bran, grain feeds	21 076	130		21 206
092	Breakfast cereal products	1 083			1 083
093	Biscuit products	37			37
094	Bread and rolls	34			34
095	Other bakery products	320			320
096	Cocoa and chocolate	6 358	12		6 370
097	Nuts and seeds, edible, processed	3 649	679		4 328
099	Other confectionery	239			239
101	Sugar refined	23 074	616		23 690
102	Molasses, sugar refinery products	312	2		314
106	Malt, malt flour & wheat starch	9 947			9 947
107	Maple sugar & syrop	2 805			2 805
108	Prepared cake and similar mixes	877			877
110	Coffee roasted, ground, prepared	815			815
113	Food products and by-products	17 156	77		17 233
218	Vanilla	2			2
410	Vegetable oils, refined exluding corn	9 015			9 015
592	Green coffee	6 936		383	7 319
592	Tropical fruit	78			78
	Total	292 481	1 965	6 458	300 904

Source: as for Table 15.

TABLE 24. WEIGHTING PATTERN FOR THE FOOD PROCESSING INDUSTRY

Cost Components	Shares		
	Group	Component	Commodity
1. LABOR	0.4769		
Wages & salaries		0.4499	
599 - wages & salaries			0.4409
Sup. labor income		0.0360	
600 - supplementary labor income			0.0360
2. CONTAINERS & PACKAGING	0.1903		
Metal		0.0727	
223 - converted aluminum alloys, cast			0.0035
264 - aluminum & aluminum alloys, cast			0.0003
286 - containers & bottle caps of metal			0.0671
325 - metal end products			0.0018
Plastic		0.0196	
135 - plastic pipe fittings & sheet			0.0103
136 - plastic containers & bottle caps			0.0093
Paper Products		0.0788	
214 - wrapping paper			0.0048
221 - paper cartons, bags, cans & bottles			0.0702
222 - converted paper, gum, wax & print			0.0038
Glass containers		0.0169	
391 - glass containers			0.0169
Wood		0.0009	
199 - containers, closures & wood pallets			0.0009
Textile containers		0.0014	
175 - textile containers			0.0014
3. TRANSPORTATION	0.0489		
Internal transportation		0.0038	
530 - air transport			0.0003
534 - services incidental to water transportation			0.0007
535 - railway transportation			0.0002
536 - truck transportation			0.0026
Transportation margin		0.0451	0.0451
4. TRAVEL & PROMOTION	0.0757		
Travel			
585 - travelling & entertainment		0.0282	0.0282

(continued)

TABLE 24. (Continued)

Cost Components	Shares		
	Group	Component	Commodity
Promotion		0.0475	
586 - advertising & promotion			0.0464
545 - postal services			0.0011
5. FUEL & POWER	0.0448		
Electric		0.0140	
546 - electric power			0.0140
Petroleum		0.0197	
395 - motor gasoline			0.0063
396 - fuel oil			0.0104
397 - lubricating oils & greases			0.0022
399 - butane & propane			0.0008
Natural gas		0.0111	
039 - natural gas			0.0111
6. RENT & STORAGE	0.0214		
542 - storage			0.0027
559 - other rent			0.0113
577 - rental of autos & trucks - ISPI 15.323			0.0033
579 - rental all other machinery			0.0041
7. MAINTENANCE & REPAIR	0.0509		
522 - repair construction			0.0061
580 - spare parts & maitenance supplies			0.0256
587 - purchased repair services			0.0192
8. TAXES & INSURANCE	0.0182		
Taxes		0.0152	
598 - other indirect taxes			0.0152
Insurance & WCB		0.0030	
556 - insurance & WCB			0.0030

(continued)

TABLE 24. (Concluded)

Cost Components	Shares		
	Group	Component	Commodity
9. BUSINESS AND OTHER SERVICES	0.0409		
Accounting, legal & other services		0.0295	
554 - imputed service, banks			0.0035
555 - other real estate & financial services			0.0102
566 - service to business management			0.0062
575 - rental, data processing equipment			0.0032
576 - other services			0.0034
578 - trade association dues			0.0008
595 - government goods & services			0.0015
Printing		0.0100	
231 - other printed matter			0.0100
Laundry		0.0014	
568 - laundry, cleaning & pressing service			0.0014
10. UTILITIES	0.0089		
Telephone & Telegraph		0.0077	
544 - telephone & telegragh			0.0077
Water		0.0012	
549 - water			0.0012
11. OFFICE SUPPLIES & OTHER SUPPLIES	0.0232		
Chemicals		0.0113	
117 - alcohol, natural, ethyl			0.0005
408 - pharmaceuticals			0.0012
414 - industrial chemical preparations			0.0010
421 - carbon dioxide (gas & dry ice)			0.0007
422 - inorganic oxides and oxygen			0.0004
424 - caustic soda (sod. hydroxide) dry			0.0003
432 - metallic salts & peroxysalts			0.0005
433 - photographic & inorganic chemicals			0.0010
444 - hydrocarbons & their derivatives			0.0004
449 - alcohols, and treated			0.0004
458 - citric acids			0.0011
459 - stearic and organic acids			0.0005
461 - sodium glutamate, mono.			0.0007
464 - organic chemicals			0.0004
479 - crude vegetable materials			0.0012
492 - essential oils, natural or synthetic			0.0010
Office supplies & other supplies		0.0052	
552 - rental of office equipment			0.0004
581 - offfice supplies			0.0043
582 - cafeteria supplies			0.0005
Lab. equipment & supplies		0.0066	
584 - laboratory equipment & supplies			0.0066

Source: Table 15.

TABLE 25. WEIGHTING PATTERN FOR THE FOOD WHOLESALE INDUSTRY

Cost Components	Shares		
	Group	Component	Commodity
1. LABOR	0.6028		
Wages & salaries		0.5643	
599 - wages & salaries			0.5643
Sup. labor income		0.0385	
600 - supplementary labor income			0.0385
2. CONTAINERS & PACKAGING	0.0119		
Metal		0.0005	
287 - wire & wire rope of steel			0.0005
Plastic		0.0056	
135 - plastic pipe fittings & sheet			0.0027
136 - plastic containers & bottle caps			0.0013
405 - film sheets, cellulosic plastic			0.0016
Paper Products		0.0016	
214 - wrapping paper			0.0004
225 - paper containers			0.00012
Wood		0.0034	
199 - containers, closures & wood pallets			0.0036
Textile containers		0.0008	
166 - other cordage, twine & rope			0.0002
175 - textile containers			0.0006
3. TRANSPORTATION	0.0620		
Internal transportation		0.0169	
530 - air transport			0.0004
532 - services incidental to air transport			0.0034
533 - water transportation			0.0028
534 - services incidental to water transportation			0.0006
535 - railway transportation			0.0039
536 - truck transportation services			0.0058
Transportation margin		0.0451	

(continued)

TABLE 25. (Continued)

Cost Components	Shares		
	Group	Component	Commodity
4. TRAVEL AND PROMOTION	0.0706		
Travel		0.0392	
585 - travelling & entertainment			0.0392
Promotion		0.0314	
545 - postal services			0.0072
586 - advertising & promotion			0.0242
5. FUEL & POWER	0.0561		
Electric		0.0114	
546 - electric power			0.0114
Petroleum		0.0420	
395 - motor gasoline			0.0309
396 - fuel oil			0.0086
397 - lubricating oils & greases			0.0015
399 - butane & propane			0.0010
Natural gas		0.0027	
039 - natural gas			0.0027
6. RENT & STORAGE	0.0584		
542 - storage			0.0114
559 - other rent			0.0379
577 - rental of autos & trucks			0.0045
579 - rental all-other machinery			0.0046
7. MAINTENANCE & REPAIR	0.0174		
127 - tires & tubes			0.0002
341 - motor vehicle engines & parts			0.0003
343 - motor vehicle accessory parts			0.0003
522 - repair construction			0.0024
580 - spare parts			0.0111
587 - purchased repair services			0.0031
8. TAXES & INSURANCE	0.0192		
Taxes		0.0161	
598 - other indirect taxes			0.0161
Insurance & WCB		0.0031	
556 - insurance & WCB			0.0031

(continued)

TABLE 25. (Concluded)

Cost Components	Shares		
	Group	Component	Commodity
9. BUSINESS AND OTHER SERVICES	0.0605		
Accounting, legal & other services		0.0578	
554 - imputed services, bank			0.0080
555 - other real estate & financial services			0.0161
566 - service to business management			0.0145
575 - rental, data processing equipment			0.0056
576 - other services			0.0128
578 - trade association dues			0.0005
595 - government goods & services			0.0003
Printing		0.0022	
231 - other printed matter			0.0022
Laundry		0.0005	
568 - laundry, cleaning & pressing service			0.0005
10. UTILITIES	0.0255		
Telephone & telegraph		0.0254	
544 - telephone & telegraph			0.0254
Water		0.0001	
549 - water			0.0001
11. OFFICE SUPPLIES & OTHER SUPPLIES	0.0157		
Office Supplies & Other Supplies		0.0157	
211 - other paper for printing			0.0001
212 - fine paper			0.0003
213 - tissue & sanitary paper			0.0008
329 - office machines equipment			0.0002
552 - rental of office equipment			0.0020
581 - office supplies			0.0123

Source: Table 17.

TABLE 26. WEIGHTING PATTERN FOR THE FOOD RETAILING INDUSTRY

Cost Components	Shares		
	Group	Component	Commodity
1. LABOR	0.6251		
Wages & salaries		0.5884	
599 - wages & salaries			0.5934
Sup. labor income		0.0367	
600 - supplementary labor income			0.0367
2. CONTAINERS & PACKAGING	0.0201		
Plastic		0.0028	
136 - plastic containers & bottle caps			0.0013
405 - film & sheet, cellulosic plastic			0.0015
Paper and wood products		0.0157	
199 - containers, closures & wood pallets			0.0001
214 - wrapping paper			0.0004
221 - paper cartons, bags, cans & bottles			0.0142
225 - paper containers			0.0010
3. TRANSPORTATION	0.0523		
Internal transportation		0.0072	
530 - air transport			0.0007
535 - railway transportation			0.0011
536 - truck transportation			0.0025
532 - services, incidentals to transport			0.0029
Transportation margin		0.0451	
4. TRAVEL AND PROMOTION	0.0579		
Travel		0.0089	
585 - travelling & entertainment			0.0089
Promotion		0.0490	
545 - postal services			0.0141
586 - advertising & promotion			0.0349

(continued)

TABLE 26. (Continued)

Cost Components	Shares		
	Group	Component	Commodity
5. FUEL & POWER	0.0586		
Electric		0.0264	
546 - electric power			0.0264
Petroleum		0.0228	
395 - motor gasoline			0.0166
396 - fuel oil			0.0056
397 - lubricating oils & greases			0.0006
Natural Gas		0.0094	
039 - natural gas			0.0094
6. RENT & STORAGE	0.0831		
542 - storage			0.0031
559 - other rent - ISPI 14.316 Commercial			0.0755
577 - rental of autos & trucks			0.0019
579 - rental, all other machinery			0.0024
7. MAINTENANCE & REPAIR	0.0143		
127 - tires & tubes			0.0001
522 - repair construction			0.0055
580 - spare parts & main. machinery & equipment			0.0063
587 - purchased repair services for marchinery and equipment			0.0024
8. TAXES & INSURANCE	0.0302		
Taxes		0.0238	
598 - other indirect taxes			0.0238
Insurance & WCB		0.0064	
556 - insurance & WCB			0.0064
9. BUSINESS AND OTHER SERVICES	0.0282		
Custom work		0.0012	
189 - custom tailoring			0.0012
Accounting, legal & other services		0.0247	
554 - imputed service, banks			0.0032
555 - other real estate & financial services			0.0050
566 - service to business management			0.0075
575 - rental, data processing equipment			0.0043
576 - other serv. to business & persons			0.0035
578 - trade association dues			0.0008
595 - government goods and services			0.0004

(continued)

TABLE 26. (Concluded)

Cost Components	Shares		
	Group	Component	Commodity
Printing		0.0015	
231 - other printed matter			0.0015
Laundry		0.0008	
568 - laundry, cleaning & pressing service			0.0008
10. UTILITIES	0.0135		
Telephone & telegraph		0.0131	
544 - telephone & telegraph			0.0131
Water		0.0004	
549 - water			0.0004
11. OFFICE SUPPLIES & OTHER SUPPLIES	0.0184		
213 - tissue & sanitary paper			0.0007
285 - kitchen utensils			0.0001
552 - rental of office equipment			0.0014
581 - office supplies			0.0077
582 - cafeteria supplies			0.0085

Source: Table 18.

APPENDIX B

TABLE 27. WEIGHTING PATTERN AND PRICE SERIES FOR THE FOOD PROCESSING INDUSTRY

Cost Components	Shares			
	Group	Component		Commodity
LABOR	0.4769			
Wages & salaries		0.4409		
599 - wages & salaries				0.4409
Sup. labor income		0.0360		
600 - supplementary labor income				0.0360
Labor: Employment Earnings and Hours (S.C. 72-002) Average Weekly Earnings (including overtime) for all employees. Statistics Canada, Food - Manufacturing (SIC 100-108).				
			CANSIM	D703021
			CANSIM	L 1331
CANSIM Series D703021 x .93841 = March CANSIM L1331				
CONTAINERS & PACKAGING	0.1903			
Metal		0.0727		
223 - converted aluminum alloys, cast				0.0035
ISPI 12.296 Aluminum rolling, casting & extruding industries			CANSIM	D528701
264 - aluminum & aluminum alloys, cast				0.0003
ISPI 12.296 Aluminum rolling, casting & extruding industries			CANSIM	D528701
286 - containers & bottle caps of metal				0.0671
ISPI 13.304.2.700 Cans, metal non-food			CANSIM	D630710
325 - metal end products				0.0018
ISPI 13.304.2 Metal stamping and pressing			CANSIM	D530301
Plastic		0.0196		
135 - plastic pipe fittings & sheet				0.0103
ISPI 3.165.1 Polyethylene film & sheet unsupported			CANSIM	D512702
136 - plastic containers & bottle caps				0.0103
ISPI 3.165.134 Plastic containers-food			CANSIM	D513166
Paper Products		0.0788		
214 - wrapping paper				0.0048
ISPI 10.271.56 Unbleached sulphate: converting grade - other bag			CANSIM	D525055
221 - paper cartons, bags, cans & bottles				0.0702
ISPI 10.273.3 Paper and plastic bag manufacturers			CANSIM	D526101

TABLE 27. (Continued)

Cost Components	Shares		
	Group	Component	Commodity
222 - converted paper, gum, wax & print			0.0038
ISPI 10.274 Miscellaneous paper converters		CANSIM	D526501
Glass containers		0.0169	
391 - glass containers			0.0169
ISPI 17.256.701 Formed glass products		CANSIM	D630982
Wood		0.0009	
199 - containers, closures & wood pallets			0.0009
ISPI 8.256 Wooden box factories		CANSIM	D521801
Textile containers		0.0014	
175 - textile containers			0.0014
ISPI 5.187.1 Cotton and juice bag manufacturers		CANSIM	D515901

Source: Industry Price Indexes, Statistics Canada, Catalog 62-011 Monthly.

Transportation	0.0489		
Internal transportation		0.0038	
530 - air transport			0.0003
534 - service incidental to water transportation			0.0007
534 - railway transportation			0.0002
536 - truck transportation			0.0026
Transportation margin		0.0451	

Transportation: Canadian Transport Commossion rail freight rates for selected commodities (Meats, fresh or frozen, Calgary to Montreal
Note: The data are quaterly.

Source: Canadian Transport Commission (Traffic and Tariffs Branch)

TABLE 27. (Continued)

Cost Components	Shares			
	Group	Component		Commodity
TRAVEL & PROMOTION	0.0757			
Travel		0.0282		
585 - travelling & entertainment				0.0282
CPI Travel/Holiday lodging in Hotel/Motel			CANSIM	D130404
Promotion	0.0475			
545 - postal services				0.0011
CPI Postage			CANSIM	D130153
586 - advertising & promotion				0.0464
CPI All items			CANSIM	D130436
Implicit Price Index - Advertising Annuals to 1982				D143400

Source: The Consumer price Index, Statistics Canada, Catalog 62-001.
System of National Accounts GDP by Industry - Statistics Canada, Cat. 62-213

FUEL & POWER	0.0561			
Electric		0.0114		
546 - electric power				0.0114
ISPI Electricity selling prce index over 5000 kw			CANSIM	D478000
Petroleum		0.0420		
395 - motor gasline				0.0309
ISPI 18.365.12 Motor gasoline regular grade			CANSIM	D544019
396 - fuel oil				0.0086
ISPI 18.365.1.8 Heavy fuel oil no. 6			CANSIM	D544543
397 - lubricating oils & greases				0.0022
ISPI 18.365.1.11 Lubricating oils - auto and industrial			CANSIM	D544662
399 - butane, propane & other liq. pet. gas				0.0008
ISPI 18.365.1.17 Liquid petroleum gases			CANSIM	D636134
Natural gas		0.0111		
039 - natural gas				0.0111
Natural Gas - Raw Material Price Index			CANSIM	D636134

Source: Industry Price Indexes, Statistics Canada, Catalog 62-011.

TABLE 27. (Continued)

Cost Components	Shares			
	Group	Component		Commodity
RENT & STORAGE	0.0214			
542 - storage				0.0027
Chartered Bank Prime Business Loan Rate			CANSIM	B14020
559 - other rent				0.0113
ISPI 14.316 Commercial Refrigeration			CANSIM	D534301
577 - rental of autos & trucks -				0.0033
ISPI 15.323 Motor Vehicle Manufacturers			CANSIM	D535801
579 - rental all other marchinery				0.0041
ISPI 14. Machinery Industries			CANSIM	D532900
Source: Bank of Canada Review.				
Industry Price Indexes, Statistics Canada, Catalog 62-011				
MAINTENANCE & REPAIR	0.0509			
522 - repair construction				0.0061
CPI Homeowners maintenance and repair			CANSIM	D130140
580 - spare parts & maitenance supplies				0.0256
ISPI 13. Metal fabricating industries			CANSIM	D529400
587 - purchased repair services				0.0192
CPI Homeowners maintenance and repair			CANSIM	D130140
Source: The Consumer Price Index, Statistics Canada, Catalog 62-001				
Industry Price Indexes, Statistics Canada, Catalog 62-011				
TAXES & INSURANCE	0.0182			
Taxes		0.0152		
598 - other indirect taxes				0.0152
CPI Property taxes and special charges			CANSIM	D130138
Insurance & WCB		0.0030		
556 - insurance & WCB				0.0030
CPI Homeowners insurance premiums			CANSIM	D130139
BUSINESS & OTHER SERVICES	0.0409			
Accounting, legal & other services		0.0295		
554 - imputed service, banks				0.0035
555 - other real estate & financial services				0.0102
566 - service to business management				0.0062
575 - rental, data processing equipment				0.0032
576 - other services				0.0041
578 - trade association dues				0.0008
595 - government goods & services				0.0015

(continued)

TABLE 27. (Continued)

Cost Components	Shares		
	Group	Component	Commodity
Printing		0.0100	
231 - other printed matter			0.0100
Laundry		0.0014	
568 - laundry, cleaning & pressing service			0.0014
Implicit Price Index, Service to Business Management			CANSIM D143399
CPI - All Items excluding food			CANSIM D130436

Sources: System of National Accounts, GDP by Industry, Statistics Canada, Catalog 62-213
The Consumer Price Index, Statistics Canada, Catalog 62-001.

UTILITIES	0.0089		
Telephone & Telegraph		0.0077	
544 - telephone & telegragh			0.0077
CPI Telephone service			CANSIM D130150
Water		0.0012	
549 - water			0.0012
CPI Water			CANSIM D130145

Source: The Consumer Price Index, Statistics Canada, Catalog 62-001.

OFFICE SUPPLIES & OTHER SUPPLIES		0.0232	
Chemicals		0.0113	
117 - alcohol, natural, ethyl			0.0005
ISPI 19.374 Manufacturers of pharmaceuticals & medicines			CANSIM D545701
408 - pharmaceuticals			0.0012
ISPI 19.374 Manufacturers of pharmaceuticals & medicines			CANSIM D545701
414 - industrial chemical preperations			0.0010
ISPI 19.376 Manufacturers of soap and cleaning compounds			CANSIM D546401
421 - Carbon dioxide (gas & dry ice)			0.0007
ISPI 19.378.2.42 Oxygen, gas in cylinder			CANSIM D547503
422 - Inorganic oxides & oxygen			0.0004
ISPI 19.378.2.42 Oxygen, gas in cylinder			CANSIM D547503
424 - Caustic soda (sod. Hydroxide) dry			0.0003
ISPI 19.378.2.58 Sodium hydroxide (caustic soda) as 100% NAOH			CANSIM D547613

(continued)

TABLE 27. (Concluded)

Cost Components	Shares		
	Group	Component	Commodity
432 - Metallic salts & peroxysalts			
ISPI 19.374 Manuf. of pharmaceuticals & medicines		CANSIM	0.0005 D545701
433 - Photographic & inorganic chemicals			
ISPI 19.378.2 Manufacturers of industrial chemicals		CANSIM	0.0010 D547301
444 - Hydrocarbons & their derivatives			
ISPI 19.374 Manufacturers of pharmaceuticals & medicines		CANSIM	0.0004 D545701
449 - Alcohols, and treated			
ISPI 19.374 Manufacturers of pharmaceuticals & medicines		CANSIM	0.0004 D545701
458 - Citric acids			
ISPI 19.374 Manufacturers of pharmaceuticals and medicines		CANSIM	0.0011 D545701
459 - Stearic and organic acids			
ISPI 19.374 Manuf. of pharmaceuticals & medicines		CANSIM	0.0005 D545701
461 - Sodium glutamate, mono			
ISPI 19.374 Manuf. of pharmaceuticals & medicines		CANSIM	0.0007 D545701
464 - Organic chemicals			
ISPI 19.318.3 Manufacturers of industrial chemicals (organic)		CANSIM	0.0004 D547901
479 - Crude vegetable materials & extracts			
ISPI 19.374 Manufaturers of pharmaceuticals & medicines		CANSIM	0.0012 D545701
492 - Essential oils, natural or synthetic			
ISPI 19.374 Manufacturers of pharmaceuticals & medicines		CANSIM	0.0010 D545701
Office supplies & other supplies	0.00452		
552 - rental of office equipment			
ISPI 9.264 Office furniture manufacturers		CANSIM	0.0004 D523601
581 - office supplies			
ISPI 10.274 Miscellaneous paper converters		CANSIM	0.0043 D526501
582 - cafeteria supplies			
ISPI 10.274 Miscellaneous paper converters		CANSIM	0.0005 D526501
Lab. equipment & supplies	0.0066		
584 - laboratory equipment & supplies			
ISPI 9.264 Office furniture manufacturers		CANSIM	0.0066 D523601

TABLE 28. WEIGHTING PATTERN AND PRICE SERIES FOR THE FOOD WHOLESALE INDUSTRY

Cost Components	Shares		
	Group	Component	Commodity
LABOR	0.6028		
Wages & salaries		0.5643	
599 - wages & salaries			0.5643
Sup. labor income		0.0385	
600 - supplementary labor income			0.0385
Labour: Employment Earnings and hours (S.C. 72.002) Average Weekly Earnings (including overtime) all employees, Statistics Canada. "FOOD - WHOLESALE SIC-614"			
			CANSIM D703153
CANSIM D703153 x .89991 = March CANSIM L 1442			CANSIM L 1442
CONTAINERS & PACKAGING	0.0119		
Metal		0.0005	
287 - wire & wire rope of steel			0.0005
ISPI 13.305 Wire & wire products manufacturers			CANSIM D530901
Plastic		0.0056	
135 - plastic pipe fittings & sheet			0.0027
ISPI 3.165.1 Polyethylene film & sheet unsupported			CANSIM D512702
136 - plastic containers & bottle caps			0.0013
ISPI 3.165.134 Plastic containers - food			CANSIM D513166
405 - film sheets, cellulosic plastic			0.0016
ISPI 10.273.3.28 Cellulose film bags printed			CANSIM D526101
Paper Products		0.0016	
214 - wrapping paper			0.0004
ISPI 10.273.56 Unbleached sulphate: converting grade - other bag			CANSIM D525055
225 - paper containers			0.0012
ISPI 10.274 Miscellaneous paper converters			CANSIM D526501
Wood		0.0034	
199 - containers, closures & wood pallets			0.0034
ISPI 8.256 Wooden box factories			CANSIM D521801

(continued)

TABLE 28. (Continued)

Cost Components	Shares			
	Group	Component		Commodity
Textile containers		0.0008		
166 - other cordage twine & rope				0.0002
ISPI 5.184 Cordage and twine industry			CANSIM	D515901
175 - textile containers				0.0006
ISPI 5.187.1 Cotton and jute bag manufacturers			CANSIM	D515901
TRANSPORTATION	0.0620			
Internal transportation		GE		0.
542 - storage				0.0114
Chartered Bank Prime Business Loan Rate			CANSIM	B14020
559 - other rent				0.0379
ISPI 14.316 Commercial Refrigeration and Air cond. Eqpt.			CANSIM	D535301
577 - rental of autos & trucks				0.0045
ISPI 14.323 Motor vehicle manufacturers			CANSIM	D535801
579 - Rental of all other machines				0.0046
ISPI 14. Machinery industries			CANSIM	D532900

Source: Bank of Canada Review
Industry Price Indexes, Statistics Canada, Catalog 62-011

(continued)

TABLE 28. (Continued)

Cost Components	Shares			
	Group	Component		Commodity
FUEL & POWER	0.0561			
Electric		0.0114		
546 - electric power				0.0114
ISPI Electricity selling price index over 5000 kw			CANSIM	D478000
Petroleum		0.0420		
395 - motor gasoline				0.0309
ISPI 18.365.12 Motor gasoline regular grade			CANSIM	D544019
396 - fuel oil				0.0086
ISPI 18.365.1.8 Heavy fuel oil no. 6			CANSIM	D544543
397 - lubricating oils & greases				0.0015
ISPI 18.365.1.11 Lubricating oils auto and industrial			CANSIM	D544662
399 - butane & propane				0.0010
ISPI 18.365.1.17 Liquid petroleum gases			CANSIM	D636134
Natural gas		0.0027		
039 - natural gas				0.0027
Natural Gas - Raw Material Price Index			CANSIM	D636134

Source: Industry Price Indexes, Statistics Canada, Catalog 62-001

RENT & STORAGE	0.0584			
542 - storage				0.0114
Chartered Bank Prime Business Loan Rate			CANSIM	B14020
559 - other rent				0.0379
ISPI 14.316 Commercial Refrigeration and Air Cond. Eqpt.			CANSIM	D535301
577 - rental of autos & trucks				0.0045
ISPI 15.323 Motor vehicle manufacturers			CANSIM	D535801
579 - Rental of all other machines				0.0046
ISPI 14. Machinery industries			CANSIM	D532900

Source: Bank of Canada Review.
Industry Price Indexes, Statistics Canada, Catalog 62-011

(continued)

TABLE 28. (Continued)

Cost Components	Shares			
	Group	Component		Commodity
MAINTENANCE & REPAIR	0.0174			
127 - tires & tubes				0.0002
ISPI 3.162.3 Tire and tube manufacturers			CANSIM	D511501
341 - Motor vehicles' engines & parts				0.0003
ISPI - 15.325 Motor vehicle parts & accessories			CANSIM	D536401
343 - Motor vehicle accessory parts				0.0003
ISPI - 15.325 Motor vehicle parts & accessories			CANSIM	D536401
522 - repair construction				0.0024
CPI Homeowners maintenance and repair			CANSIM	D130140
580 - Spare parts & maintenance machinery				0.0111
ISPI 14 Machinery industries			CANSIM	D532900
587 - purchased repair service				0.0031
CPI Homeowners maintenance and repair			CANSIM	D130140

Source: Industry Price Indexes, Statistics Canada, Catalog 62-001.
The Consumer Price Index, Statistics Canada, Catalog 62-001.

TAXES & INSURANCE	0.0192			
Taxes		0.0161		
598 - other indirect taxes				0.0161
CPI Property taxes and special charges			CANSIM	D130138
Insurance & WCB		0.0031		
556 - insurance & WCB				0.0031
CPI Homeowners insurance premiums			CANSIM	D130139

Source: The Consumer Price Index, Statistics Canada, Catalog 62-001.

BUSINESS & OTHER SERVICES	0.0605			
Accounting, legal & other services		0.0578		
554 - imputed service, banks				0.0080
555 - other real estate & financial service				0.0161
566 - service to business management				0.0145
575 - rental, data processing equipment				0.0056
576 - other service				0.0128
578 - trade association dues				0.0005
595 - government goods & services				0.0003

(continued)

TABLE 28. (Concluded)

Cost Components	Shares			
	Group	Component		Commodity
Printing		0.0022		
231 - other printed matter				0.0022
Laundry		0.0005		
568 - laundry, cleaning & pressing service				0.0005
Implicit Price Index, Services to Business Management			CANSIM	D143399
CPI - All .				
Industry Price Indexes, Statistics Canada, Catalog 62-011				
MAINTENANCE & REPAIR	0.0509			
522 - repair construction				0.0061
CPI Homeowners maintenance and repair			CANSIM	D130140
580 - spare parts & maitenance supplies				0.0256
ISPI 13. Metal fabricating industries			CANSIM	D529400
587 - purchased repair services				0.0192
CPI Homeowners maintenance and repair			CANSIM	D130140
Source: The Consumer Price Index, Statistics Canada, Catalog 62-001				
Industry Price Indexes, Statistics Canada, Catalog 62-011				
TAXES & INSURANCE	0.0182			
Taxes		0.0152		
598 - other indirect taxes				0.0152
CPI Property taxes and special charges			CANSIM	D130138
Insurance & WCB		0.0030		
556 - insurance & WCB				0.0030
CPI Homeowners insurance premiums			CANSIM	D130139
BUSINESS & OTHER SERVICES	0.0409			
Accounting, legal & other services		0.0295		
554 - imputed service, banks				0.0035
555 - other real estate & financial services				0.0102
566 - service to business management				0.0062
575 - rental, data processing equipment				0.0032
576 - other services				0.0041
578 - trade association dues				0.0008
595 - government goods & services				0.0015

(continued)

TABLE 29. WEIGHTING PATTERN AND PRICE SERIES FOR THE FOOD RETAILING INDUSTRY

Cost Components	Shares			
	Group	Component		Commodity
LABOR	0.6251			
Wages & salaries		0.5884		
599 - wages & salaries				0.5884
Sup. labor income		0.0367		
600 - supplementary labor income				0.0367
Labour: Employment Earnings and Hours (S.C. 72-002) average Weekly Earnings (including overtime) all Employees (Statistics Canada, "Retail Food Stores SIC-631".)				
CANSIM D703162 .84679 = March CANSIM L1457			CANSIM CANSIM	D703162 L 1457
CONTAINERS & PACKAGING	0.0185			
Plastic		0.0028		
136 - plastic containers & bottle caps				0.0013
ISPI 3.165.134 Plastic containers food			CANSIM	D513166
405 - film & sheet, cellulosic plastic				0.0015
ISPI 10.273.3.32 Polyethlene film bags			CANSIM	D526343
Paper and wood products		0.0157		
199 - Containers, closures & wood pallets				0.0001
ISPI 8.256 Wooden box factories			CANSIM	D515901
214 - wrapping paper				0.0004
ISPI 10.271.56 Unbleached sulphate: converting grade - other bag			CANSIM	D525055
221 - paper cartons, bags, cans & bottles				0.0142
ISPI 10.273.3 Paper and plastic bag manufacturers			CANSIM	D526101
225 - paper containers				0.0010
ISPI 10.274 Miscellaneous paper converters			CANSIM	D526501

Source: Industry Price Indexes, Statistics Canada, Catalog 62-011.

(continued)

TABLE 29. (Continued)

Cost Components	Shares			
	Group	Component		Commodity
TRANSPORTATION	0.0523			
Internal transportation		0.0072		
530 - air transport				0.0007
535 - railway transportation				0.0011
536 - truck transportation				0.0026
532 - services, incidentals to transport				0.0029
Transportation margin		0.0451		
Transportation: Canadian Transport Commission, rail freight rates for selected commodities (Meats (fresh or frozen) Calgary to Montreal) NOTE: Data are quarterly.				
Source: Canadian Transport Commission (Traffic and Tariffs Branch)				
TRAVEL AND PROMOTION	0.0579			
Travel		0.0089		
585 - travelling & entertainment				0.0089
CPI Travel/Holiday Lodging in Hotel/Motel			CANSIM	D130404
Promotion		0.0490		
545 - postal services				0.0141
CPI Postage			CANSIM	D130153
586 - advertising & promotion				0.0349
CPI All Items - excluding food			CANSIM	D130436
Implicit Price Index - Advertising services				D143400
Source: The Consumer Price Index, Statistics Canada, Catalog 62-001 System of National Accounts, GDP by Industry, Statistics Canada, Cat. 61-213				
FUEL & POWER	0.0586			
Electric		0.0264		
546 - electric power				0.0264
ISPI Electricity selling price indexes over 5000 kw			CANSIM	D478000
Petroleum		0.0228		
395 - motor gasoline				0.0166
ISPI 18.365.12 Motor gasoline regular grade			CANSIM	D544019

(continued)

TABLE 29. (Continued)

Cost Components	Shares		
	Group	Component	Commodity
396 - fuel oil			
ISPI 18.365.1.8 Heavy fuel oil no. 6		CANSIM	0.0056 D544543
397 - lubricating oils & greases			
ISPI 18.365.1.11 Lubricating oils - auto and industrial		CANSIM	0.0006 D544662
Natural Gas		0.0094	
039 - natural gas			
Natural Gas - Raw Material Price Index		CANSIM	0.0094 D636134
Source: Industry Price Indexes, Statistics Canada, Catalog 62-011			
RENT & STORAGE	0.0831		
542 - storage			
Chartered Bank Prime Business Loan Rate		CANSIM	0.0033 B 14020
559 - other rent			
ISPI 14.316 Commercial Refrigeration Equipment		CANSIM	0.0755 D535301
577 - rental of autos & trucks			
ISPI - 15.323 Motor Vehicle Manufacturers		CANSIM	0.0019 D535801
579 - rental of all other machines			
ISPI 14 machinery industries		CANSIM	0.0024 D532900
Source: Bank of Canada Review. Industry Price Indexes, Statistics Canada, Catalog 62-011			
MAINTENANCE & REPAIR	0.0143		
127 - Tires and tubes			
ISPI 3.162.3 Tire and tube manufacturers		CANSIM	0.0001 D511501
522 - repair construction			
CPI Homeowners maintenance and repair		CANSIM	0.0055 D130140
580 - Spare parts & maintenance machinery & equipment			
ISPI 14. Machinery industries		CANSIM	0.0063 D532900
587 - purchased repair services			
CPI Homeowners maintenance and repair		CANSIM	0.0024 D130140
Source: The Consumer Price Index, Statistics Canada, Catalog 62-001.			

(continued)

TABLE 29. (Continued)

Cost Components	Shares			
	Group	Component		Commodity
TAX & INSURANCE	0.0302			
Taxes		0.0238		
598 - other indirect taxes				0.0238
CPI Property taxes and special charges			CANSIM	D130138
Insurance & WCB		0.0064		
556 - insurance & WCB				0.0064
CPI Homeowners insurance premiums			CANSIM	D130139
Source: The Consumer Price Index, Statistiscs Canada, Catalog 62-001				
BUSINESS & OTHER SERVICES	0.0282			
Custom work		0.0012		
189 - Custom tailoring				0.0012
Accounting, legal & other services		0.0247		
554 - imputed service, banks				0.0032
555 - other real estate & financial services				0.0050
566 - service to business management				0.0075
575 - rental, data processing equipment				0.0043
576 - other services to business & persons				0.0035
578 - trade association dues				0.0008
595 - government goods & services				0.0004
Printing		0.0015		
231 - other printed matter				0.0015
Laundry		0.0008		
568 - laundry, cleaning & pressing service				0.0008
Implicit Price Index, Service to Business Management			CANSIM	D143399
CPI - All Items Excluding Food			CANSIM	D130436
Source: The Consumer Price Index, Statistics Canada, Catalog 62-01. System of National Accounts, GDP by Industry, Statistics Canada. Catalog 62-213				
UTILITIES	0.0135			
Telephone & telegraph		0.0131		
544 - telephone & telegraph				0.0131
CPI Telephone service			CANSIM	D130150
Water		0.0004		
549 - water				0.0004
CPI Water			CANSIM	D130145
Source: The Consumer Price Index, Statistics Canada, Catalog 62-001.				

(continued)

TABLE 29. (Concluded)

Cost Components	Shares		
	Group	Component	Commodity
OFFICE SUPPLIES & OTHER SUPPLIES	0.0184		
213 - tissue & sanitary paper			
ISPI 10.271.46 Miscellaneous paper converters		CANSIM	0.0007 D526501
285 - kitchen utensils			
ISPI 13.304.2 Metal stamping and pressing		CANSIM	0.0001 D530301
552 - rental of office equipment			
ISPI 9.264 Office furniture manufacturers		CANSIM	0.0014 D523601
581 - office supplies			
ISPI 10.274 Miscellaneous paper converters		CANSIM	0.0077 D526501
582 - cafeteria supplies			
ISPI 10.274 Miscellaneous paper converters		CANSIM	0.0085 D526501

Source: Industry Price Indexes, Statistics Canada, Catalog 61-213.

APPENDIX C

TABLE 30. THE U.S. FOOD MARKETING COST INDEX, 1978-1983

	1978	1979	1980	1981	1982	1983
			(1967=100)			
Total FMCI	227.0	252.6	286.2	317.5	333.9	342.3
	[a]1					
	8.5	11.1	13.5	10.9	5.2	2.5
Labor	244.4	265.8	292.6	321.3	342.7	354.8
	9.9	8.8	10.1	9.8	6.7	3.5
Containers and packaging	204.7	228.4	261.5	280.9	274.2	280.2
	6.2	11.6	14.5	7.4	-2.0	1.8
Transportation	220.5	251.3	297.9	345.9	371.0	374.4
	7.5	14.0	18.5	16.1	7.3	0.9
Advertising	181.3	197.4	214.5	234.9	260.1	280.1
	9.0	8.9	8.7	9.5	10.7	7.7
Fuel and power	331.7	418.2	564.0	669.2	705.1	703.2
	6.8	26.1	34.9	18.7	5.4	-0.3
Communications, water, sewage	147.5	148.7	153.9	168.7	186.7	199.6
	3.4	0.8	3.5	9.6	10.7	6.9
Rent	199.2	216.4	235.4	255.0	264.3	260.6
	7.7	8.6	8.8	8.3	3.6	-1.4
Maintenance and repair	226.9	249.7	277.1	304.0	325.1	338.2
	8.5	10.0	11.0	11.0	6.9	4.0
Business services	195.2	211.0	231.9	254.2	277.1	292.0
	7.0	8.1	9.9	9.6	9.0	5.4
Supplies	197.8	224.3	258.8	283.8	289.1	286.6
	4.7	13.4	15.4	9.7	1.9	-0.9
Taxes and insurance	237.3	246.9	270.6	294.0	309.9	327.5
	8.4	4.0	9.0	8.6	5.4	5.7
Interest	156.4	213.5	240.3	288.8	232.6	174.0
	42.4	36.5	12.6	20.2	-19.5	-25.2

[a]Percent change from a year ago.

Sources: USDA Economics, Statistics and Cooperatives Service, Technical Bulletin No. 1633; USDA Economic Research, Agricultural Outlook.

APPENDIX D

FIGURE 1. ANNUAL PERCENT CHANGES IN THE FOOD MARKETING COST INDEX(FMCI), 1979-83

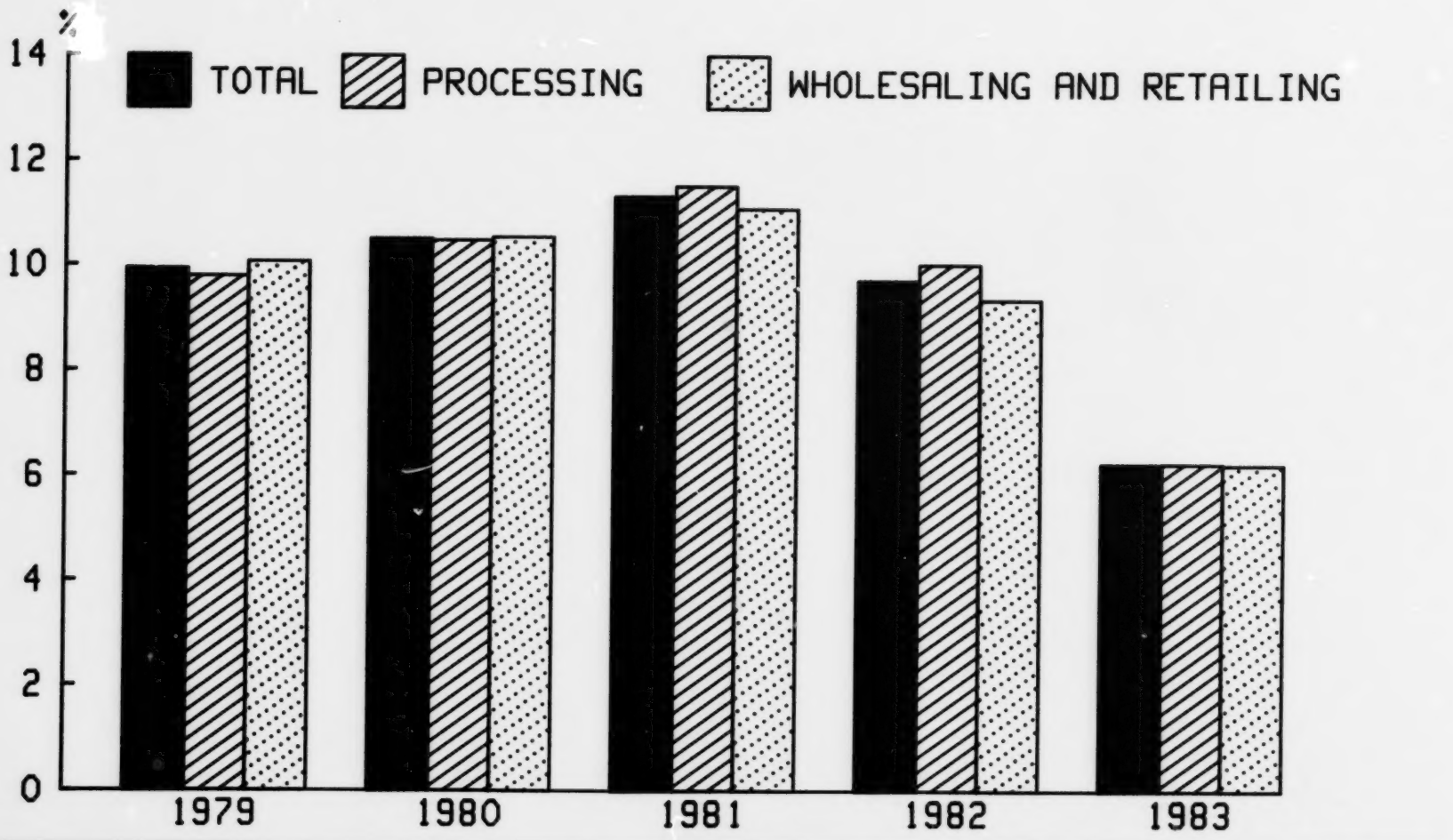


FIGURE 2. ANNUAL PERCENT CHANGES IN THE LABOR COMPONENT OF THE FMCI, 1979-83

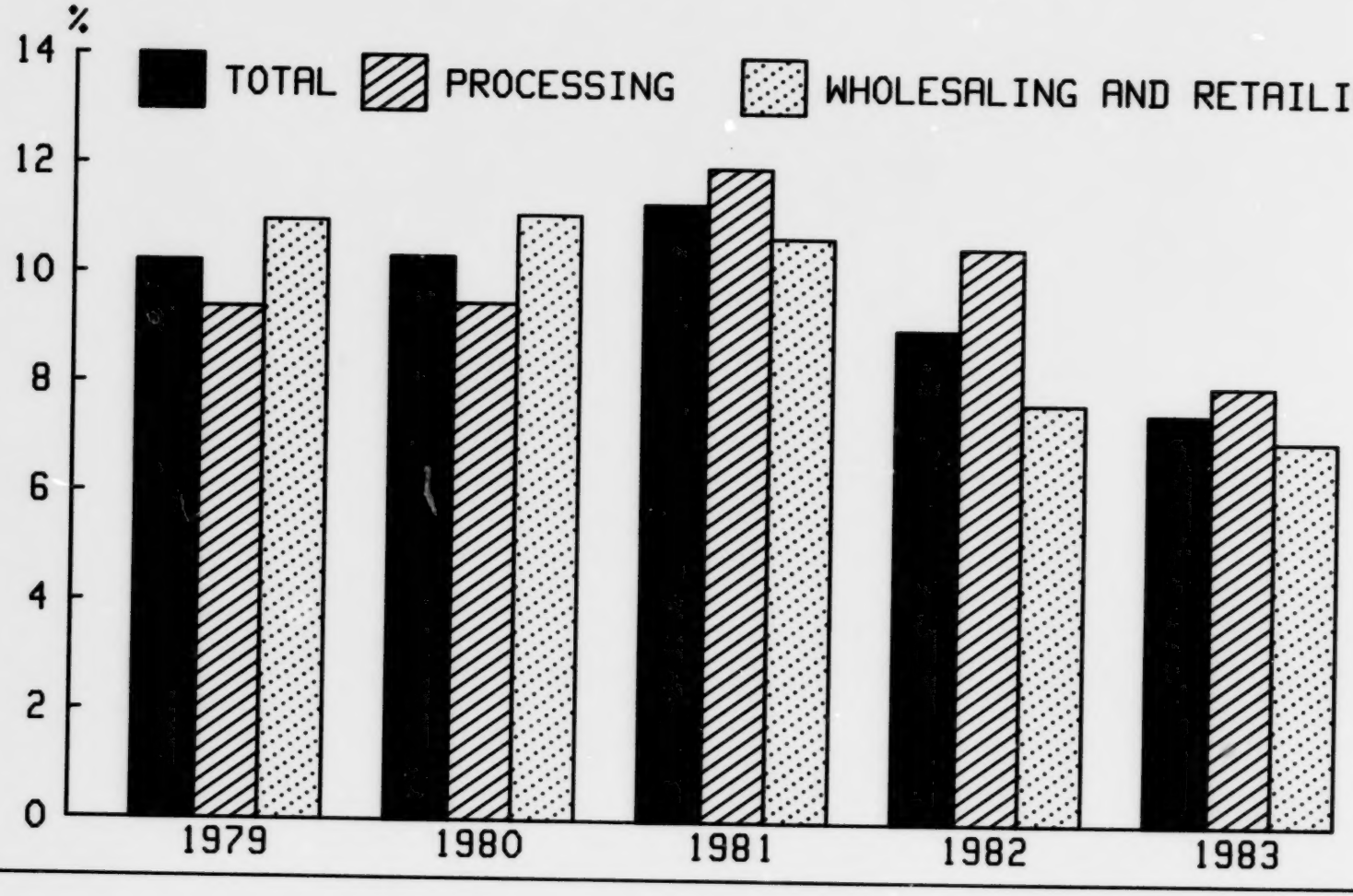


FIGURE 3. ANNUAL PERCENT CHANGES IN THE CONTAINERS AND PACKAGING COMPONENT OF THE FMCI, 1979-83

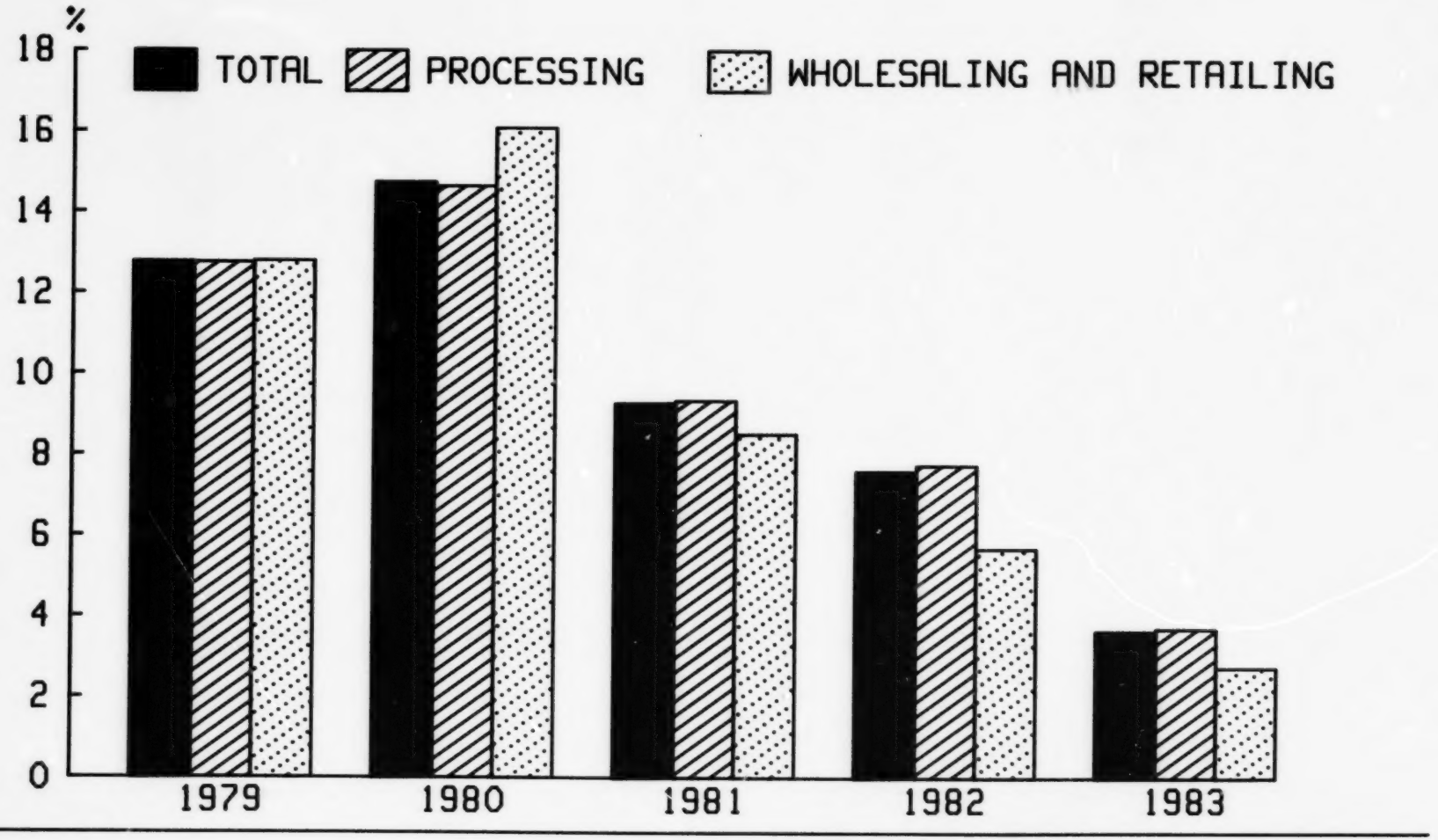


FIGURE 4. ANNUAL PERCENT CHANGES IN THE TRANSPORTATION COMPONENT OF THE FMCI, 1979-83

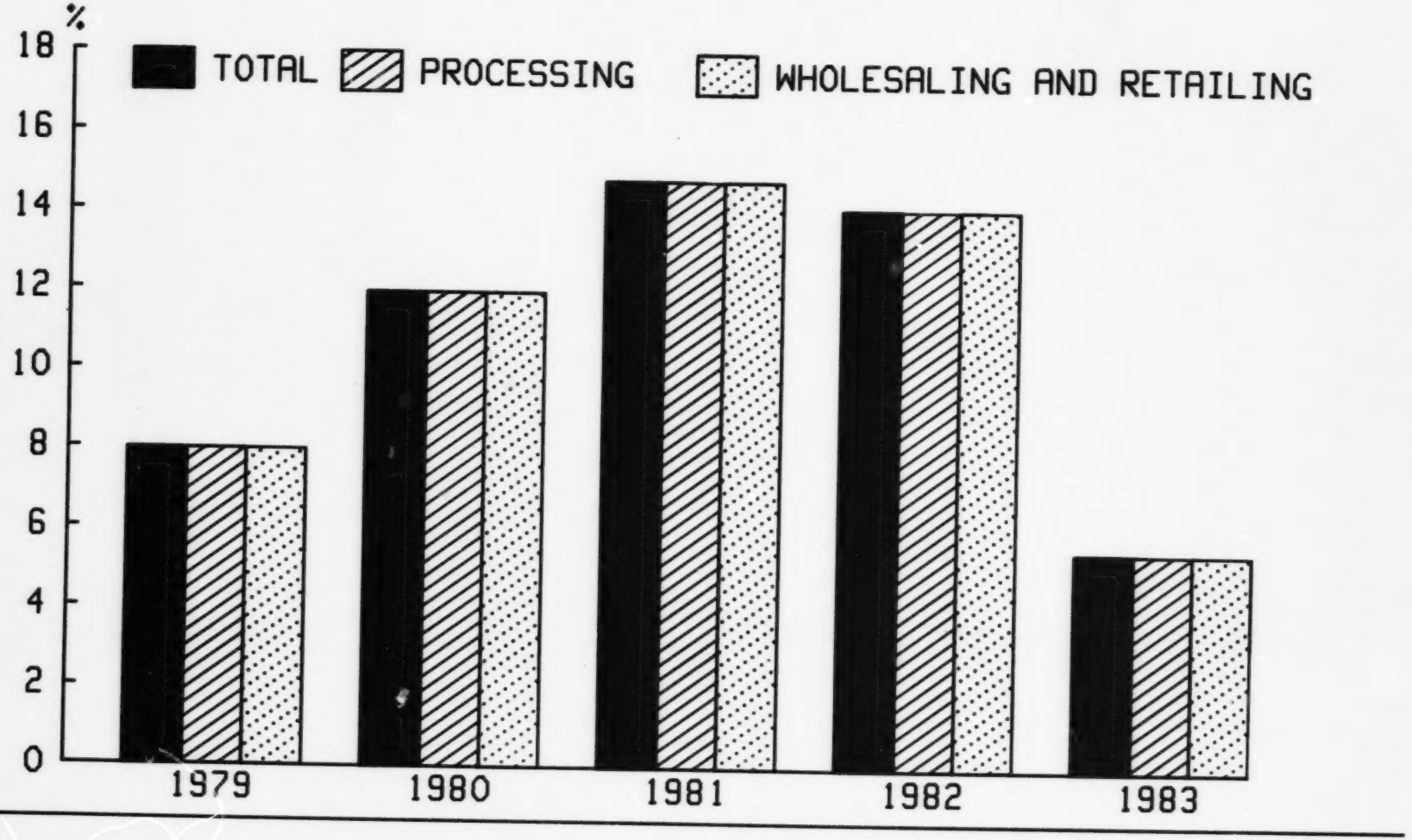


FIGURE 5. ANNUAL PERCENT CHANGES IN THE TRAVEL AND PROMOTION COMPONENT OF THE FMCI, 1979-83

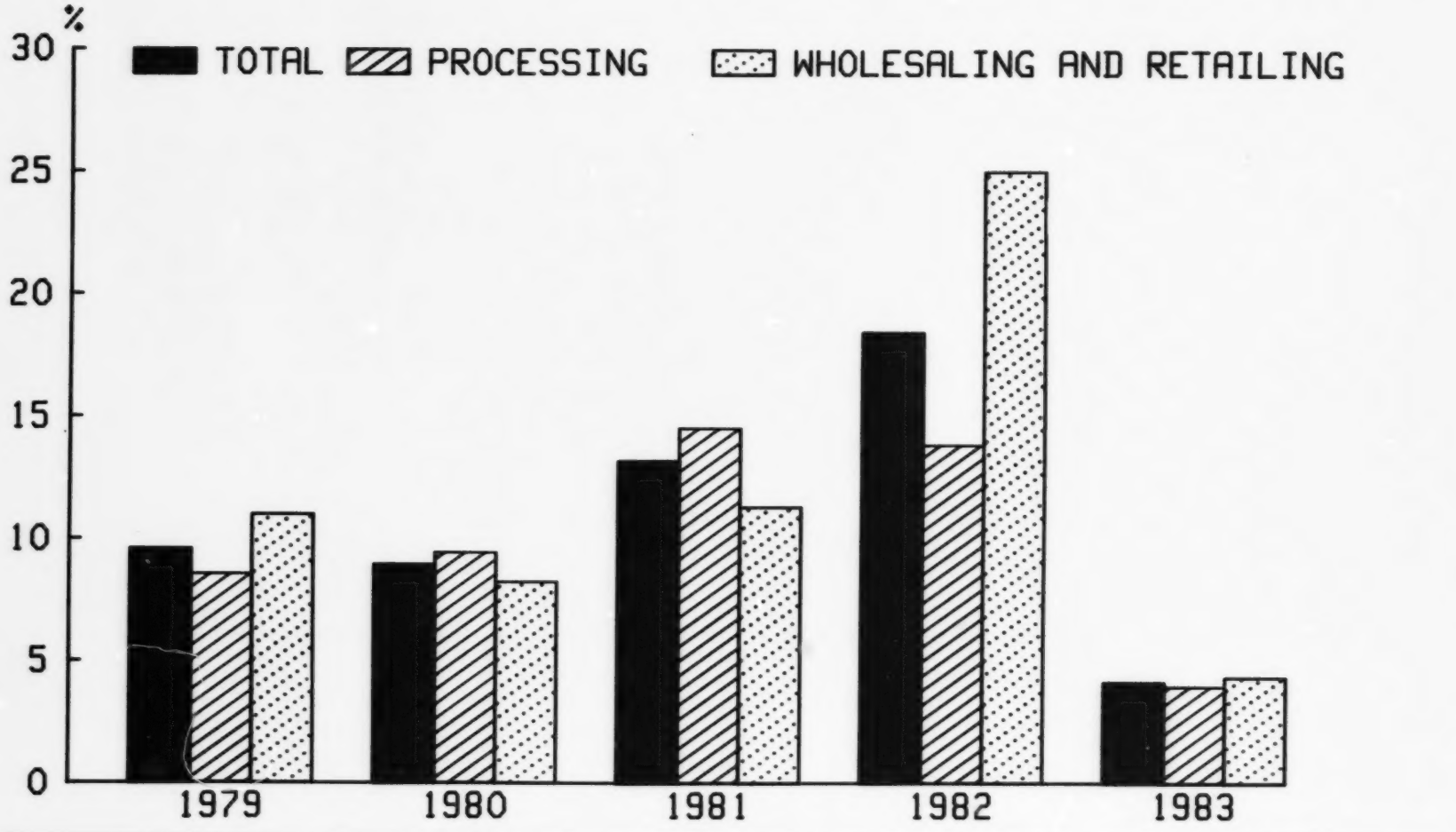


FIGURE 6. ANNUAL PERCENT CHANGES IN THE FUEL AND POWER COMPONENT OF THE FMCI, 1979-83

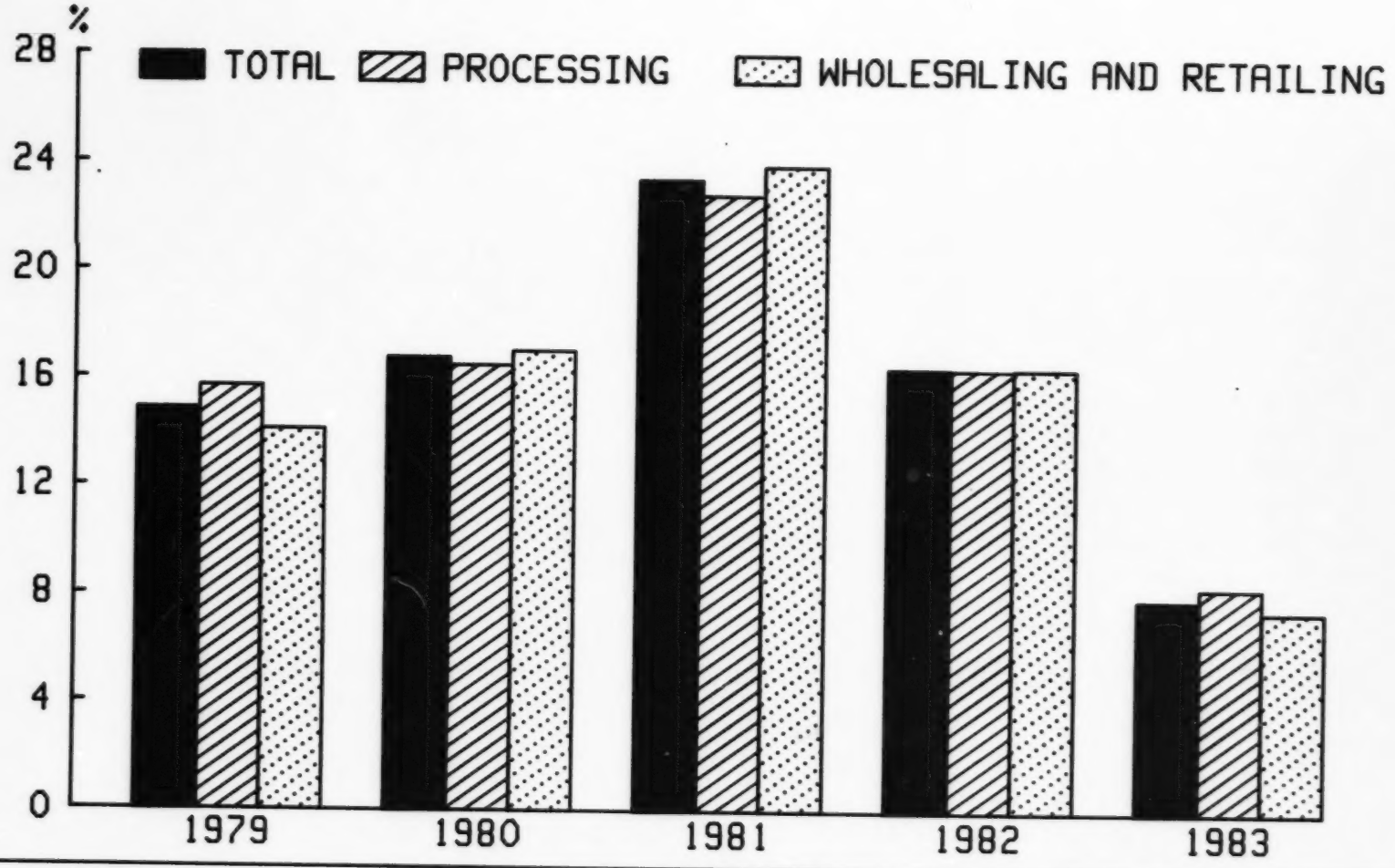


FIGURE 7. ANNUAL PERCENT CHANGES IN THE RENT AND STORAGE COMPONENT OF THE FMCI, 1979-83

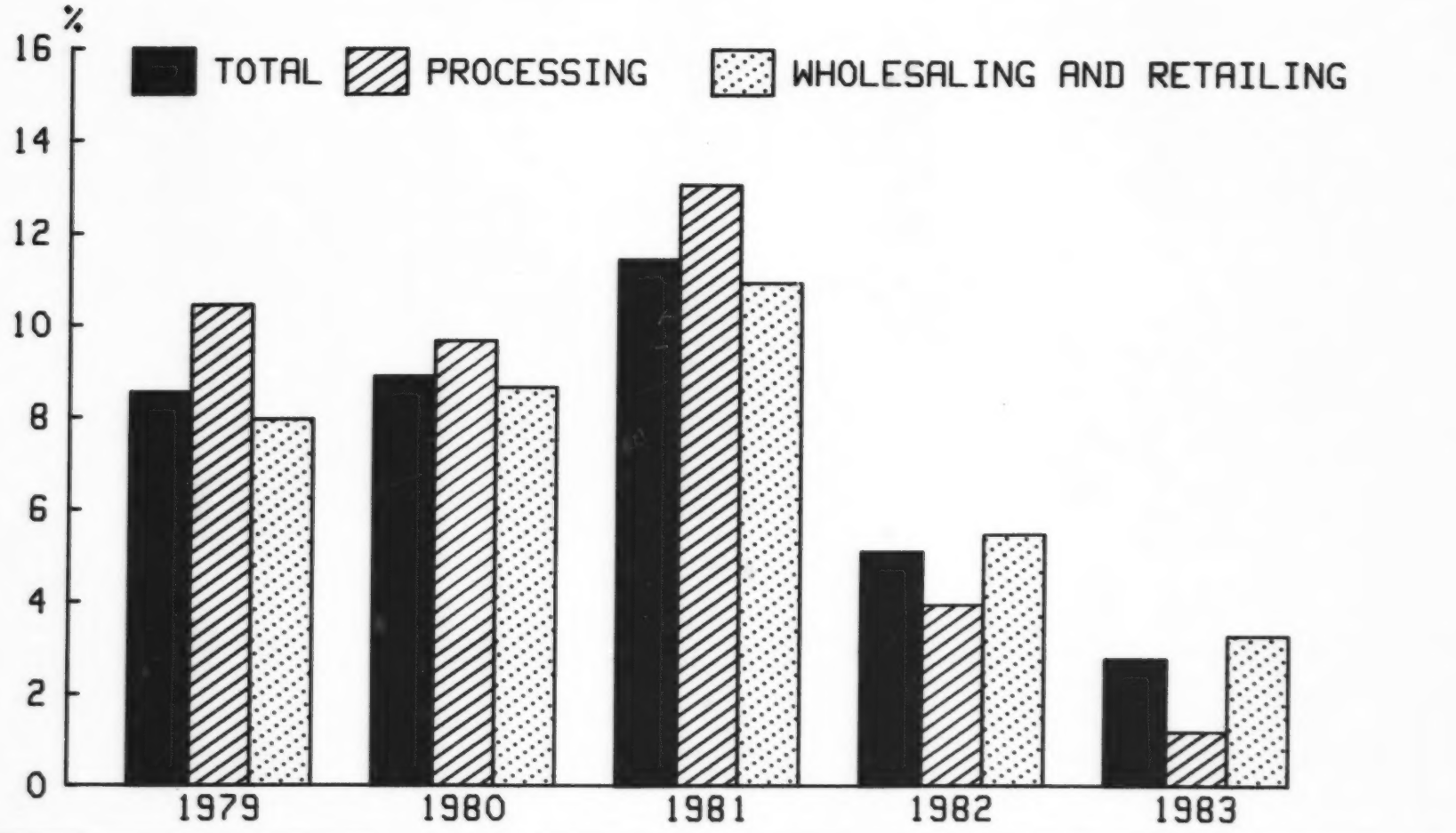


FIGURE 8. ANNUAL PERCENT CHANGES IN THE MAINTENANCE AND REPAIR COMPONENT OF THE FMCI, 1979-83

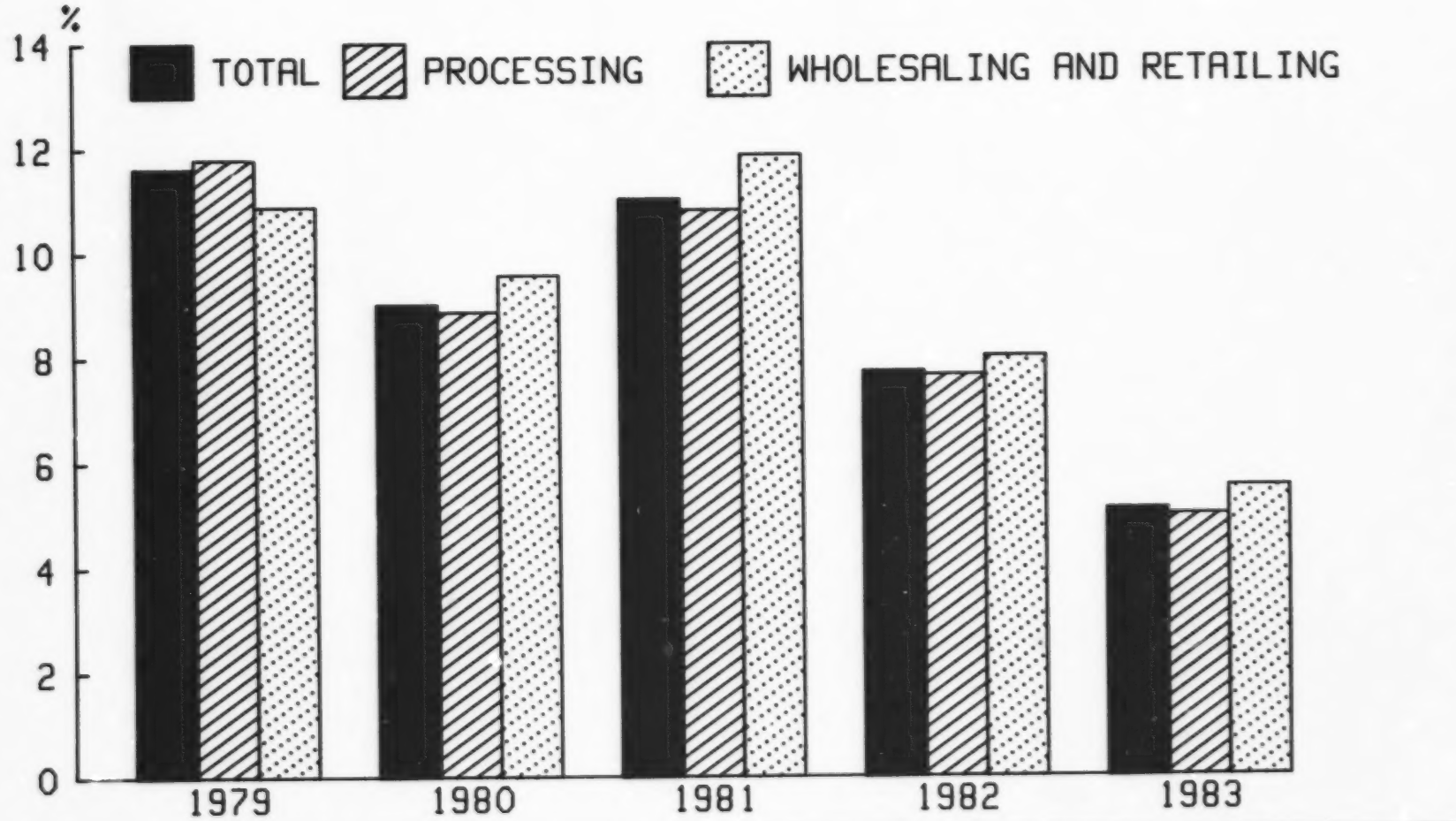


FIGURE 9. ANNUAL PERCENT CHANGES IN THE TAXES AND INSURANCE COMPONENT OF THE FMCI, 1979-83

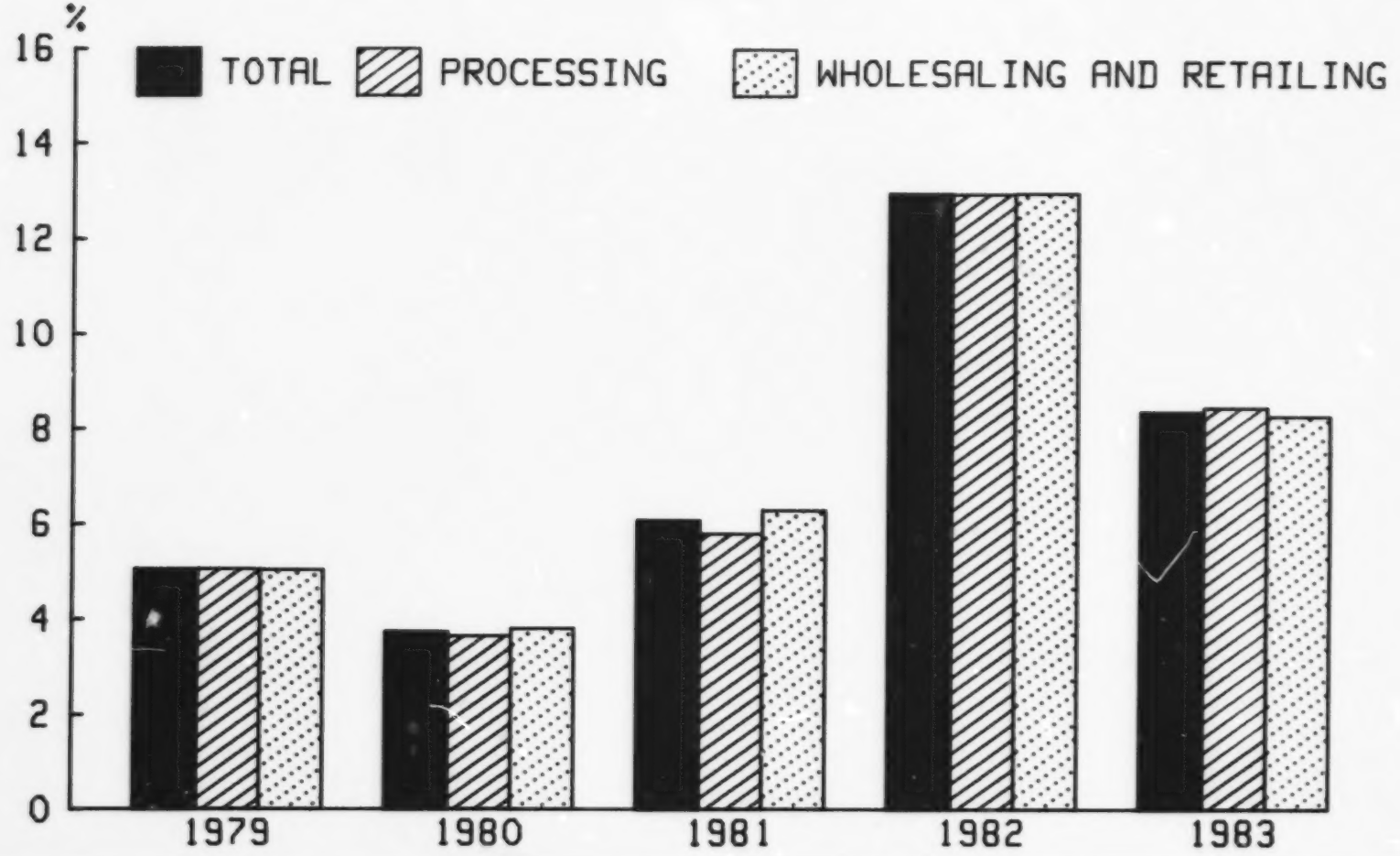


FIGURE 10. ANNUAL PERCENT CHANGES IN THE BUSINESS AND OTHER SERVICES COMPONENT OF THE FMCI, 1979-83

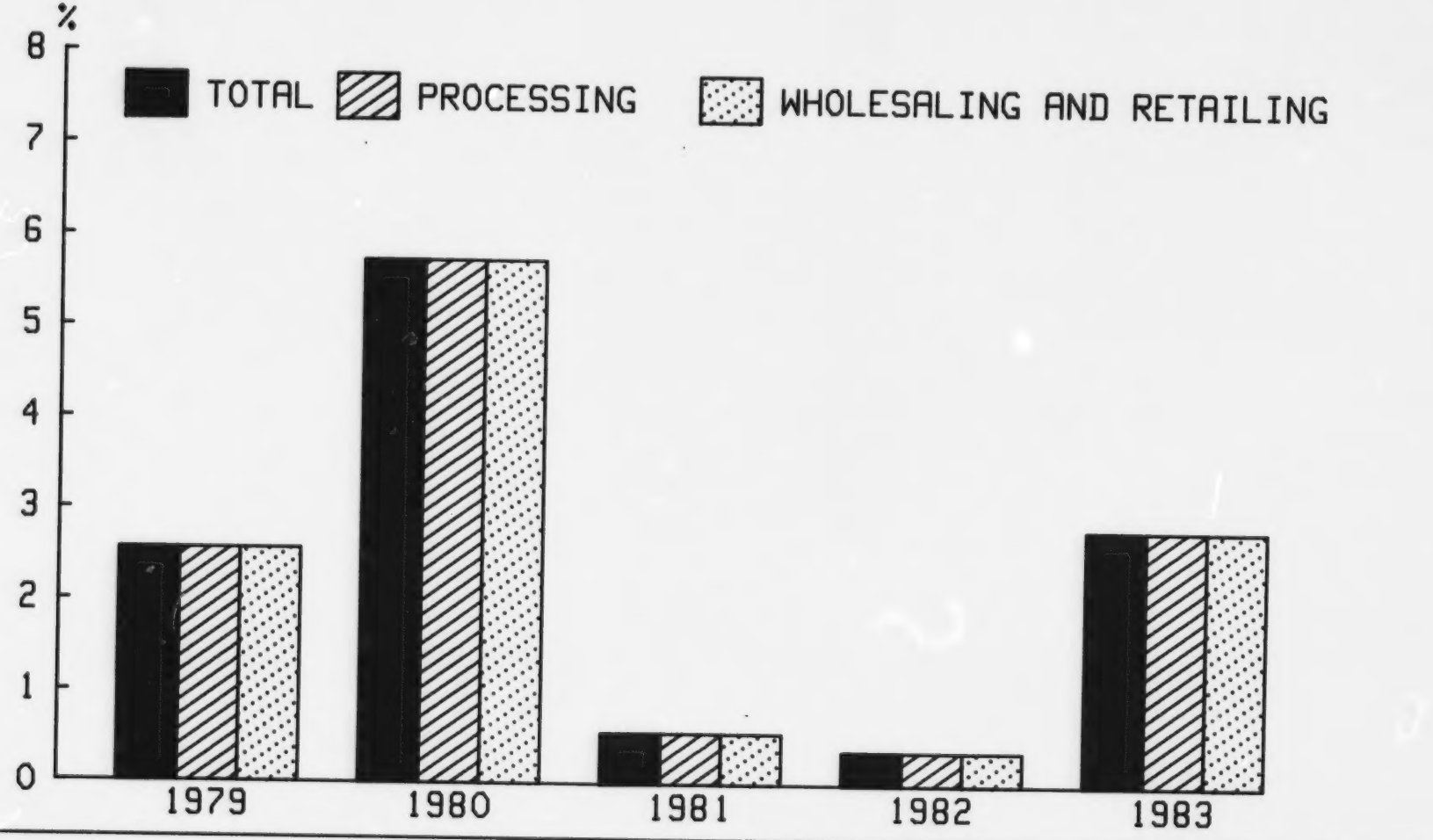


FIGURE 11. ANNUAL PERCENT CHANGES IN THE UTILITIES COMPONENT OF THE FMCI, 1979-83

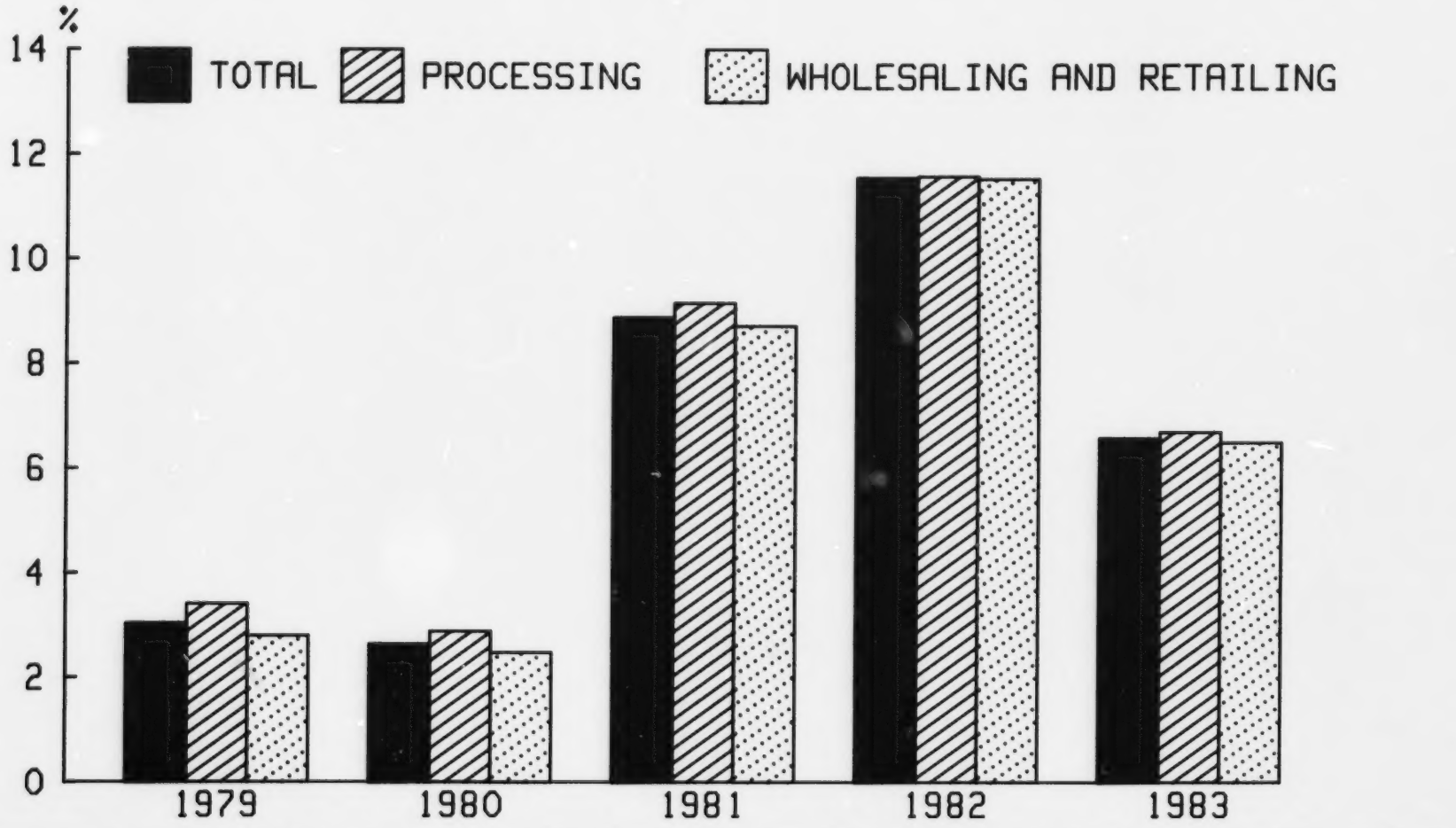
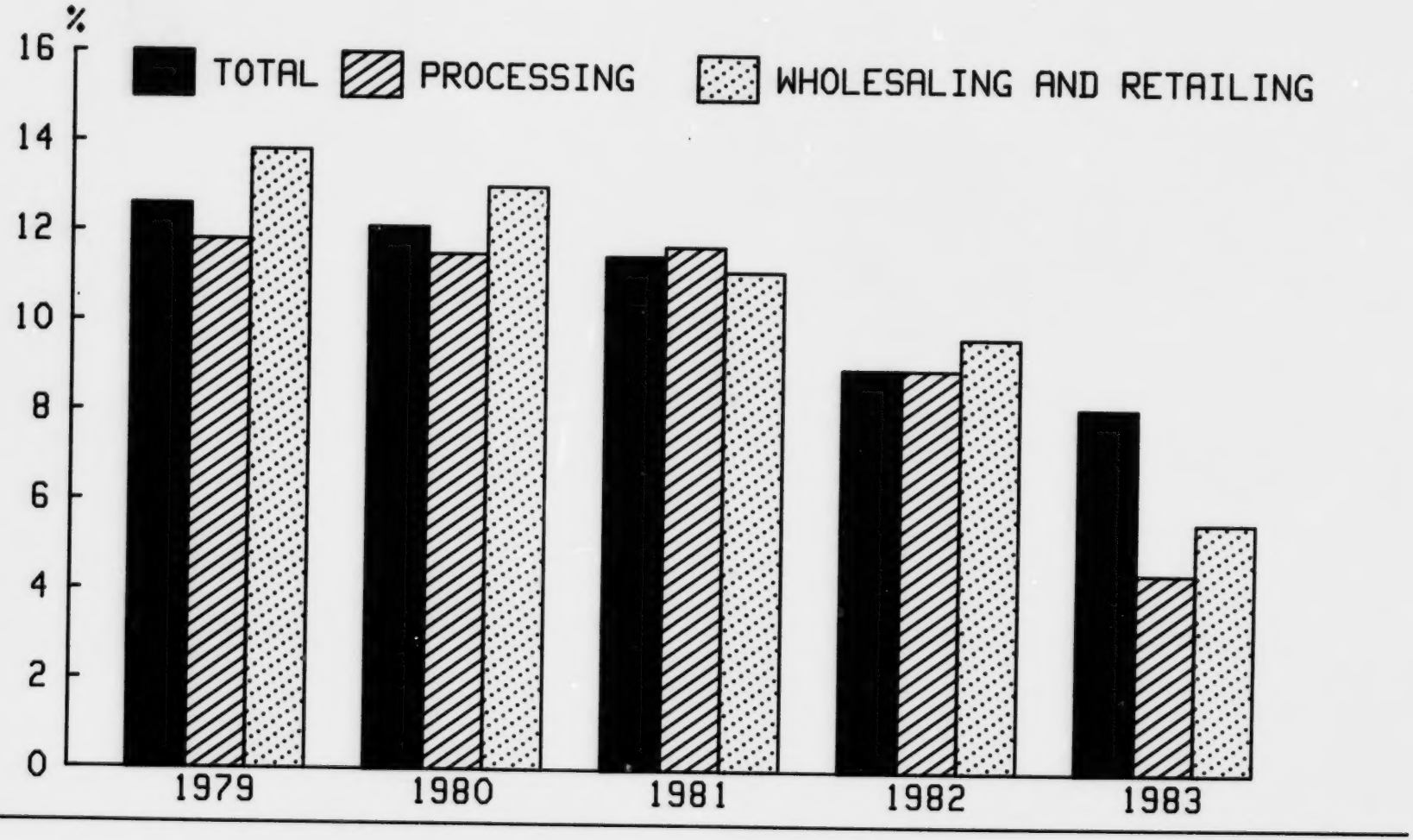


FIGURE 12. ANNUAL PERCENT CHANGES IN THE OFFICE AND OTHER SUPPLIES COMPONENT OF THE FMCI, 1979-83



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